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RETAIL MEAT MARKETING IN OHIO

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SUMMARY

A. General Meat Retailing Practices

The sample consisted of 211 participating stores of which 81.5 percent were independently operated, 10.0 percent were voluntary chains, and 8.5 percent were members of corporate chain organizations. The sample period was for the month of May, 1953, and all data was secured by personal interview.

The general results can be summarized as follows:

1. Of the 211 stores, 76.4 percent were operated on a single proprietorship basis, 13.7 percent as partnership, 8.5 percent as corporations, and 1.4 percent as cooperatives.

2. Of the total pounds of meat sold during May, 1953, independent stores sold 55.8 percent, voluntary chains sold 9.3 percent, and chains 34.9 percent. Yet chains constituted only 8.5 percent of the total number of stores.

3. The service meat case was used by most of the independent stores with the chain stores showing a rapid conversion to self-service meat cases. Power equipment for handling meat was found in nearly all stores. A walk-in 8x10 foot cooler was the size commonly found in most stores with some small stores still using the upright household refrigerator.

4. The average independent store had 30.9 percent of its store floor space in the meat department and realized 40.1 percent of its total sales in this area. Chains averaged 20.8 percent of total floor space in the meat department and realized 30.2 percent of total sales in that area.

5. About 75.0 percent of the purchase orders were conducted either by telephone or through a meat salesman with the telephone preferred by independents and voluntary chains and the meat salesman by the chain stores.

6. The greatest amount of meat was purchased by description rather than by inspection and in fresh meats, federal grades were preferred.

7. Small store operators maintained only a minimum amount of bookkeeping and records. Larger stores recorded detailed inventory and sales accounts.

8. Nearly 90.0 percent of the chains followed the regular practice of weighing their meat orders when received, but only slightly more than half of the independent operators and one-third of the smallest retailers followed this practice.

9. Prices for retail sales were most often determined in all types of stores by a percentage mark-up over costs with consideration given to competitors' prices.

10. The average margin goal for all stores for the meat department was 20.9 percent; for sausage and luncheon meat 26.1 percent, and poultry 18.5 percent.

11. Credit and delivery were still associated with the small neighborhood grocery; chain stores offered no credit or delivery service.

12. Beef and pork accounted for 48.0 percent and 25.2 percent of total volume, respectively.

13. In the all-store average, the federal "good grade" of meat was the most popular. The "choice grade" sold in largest volume by chains.

14. Saturday was the most important meat sales day in the week, 33.6 percent of the total volume, but the three days Thursday, Friday, and Saturday accounted for 67.2 percent of total volume. Meat was sold in some stores seven days of the week.

B. Self-Service Meat Practices

Both chain and independent stores in Ohio selling meat on a self-service basis used similar merchandising practices. An analysis of 891 retail stores covering every county in the state of Ohio revealed these common practices.

1. Over 90.0 percent of the retail grocery stores had meat departments. Nearly 48.0 percent, or 422 stores, had self-service fresh meat departments.

2. More than 86.0 percent of these self-service meat departments packaged fresh meat within the store. Many stores received vacuum packaged luncheon and variety meats, sealed and wrapped at the packer level.

3. Most of the self-service meat departments afforded consumers an opportunity to order any special cut of meat desired. The most frequent method was the use of a buzzer bell.

4. About 53.0 percent of the self-service meat departments had an employee or hostess attending the meat cases at the time of interview. Constant servicing of the case is necessary, if the displays are to be maintained adequately.

5. Signs called the attention of the consumer to a sale on a particular meat product. In many cases the signs were too small and illegible. Most meat departments did little to inform consumers other than to display wall charts or pictures.

6. Less than 3.0 percent of the self-service meat departments provided scales for consumers to check-weigh the meat package. About 70.0 percent of the self-service meat departments had a portion or all of the prepackaged rooms visible to the consumer.

7. Several self-service meat departments reported discoloration of packaged fresh meats. This emphasized the need for constant supervision in servicing the meat case. Discoloration occurred mainly in beef cuts, such as sirloin steaks, round steaks, cube steaks and chuck roasts.

8. Because lighting may be a contributing factor to the speed of discoloration, many self-service stores favored using extended or recessed ceiling spotlights.

9. About 2/3 of the self-service meat departments were located at the rear of the store. Most retailers route their consumers to pass the meat cases. With some exceptions, the meat packaging room is located directly behind the self-service display cases.

10. The average supermarket is equipped with from 4 to 8, twelve-foot meat cases. These cases are of all types. The open case and the front-loading-mirrored-type case are the most commonly used.

11. Most of the self-service meat departments displayed meats by species (pork, beef, etc.) rather than by type of cuts (chops, roasts, etc.). Markets displayed their meat flat, on ends, or by shingling (overlapping the meat package), depending upon the types of meat packages handled.

12. Dividers or separators were used in only about 25.0 percent of the self-service retail meat cases. Many types of dividers were used. Artificial greens were the most attractive and made the meat appear to have more color. Utility cases were used in about 29.0 percent of the self-service meat departments for displaying specials and smoked meats on certain days.

13. About 50.0 percent of the self-service meat departments placed the labels on the inside of the package, and 50.0 percent on the outside of the package. Very few labels on the outside of the packages were found torn or completely off.

14. Practically all self-service meat departments used a flat cardboard base at the bottom of each meat package mainly for absorbing the meat juices and to facilitate sealing. The size of this cardboard in relation to the size of the meat cut was often exaggerated and wasteful.

15. The majority of the self-service meat departments used hand-sealing irons in packaging. A few large markets used a wrapping machine and an assembly line approach to packaging.

This study indicated that the self-service meat departments in Ohio are satisfactorily retailing meat, but there is still ample opportunity for improvements to be made. Some suggested improvements are:

1. Improve the packaging to make the meat more attractive.

2. Offer a complete variety of self-service meats. A limited number of available cuts discourages consumers.

3. Maintain an adequate display case.

4. Put the U. S. Grades on the labels.

5. Continuous servicing of the self-service cases to remove old and discolored packages.

6. Offer roasts, steaks and chops in various thicknesses to meet the needs of families of various sizes.

7. Offer packages containing a varying number of pieces, especially chops.

8. Some stores show the price per pound for meat items, only on the label. This slows traffic. Many customers will pick up the package to see the price. (See the section on meat pricing.)

9. Experiment with pricing higher the more desirable packages of the same cut and pricing lower the less desirable packages of the same cut. Some stores put undesirable packages on top, and force the customer to dig down through the pile to find the desirable packages, or do not refill the display case until the undesirable packages have been purchased. Customers refuse to buy and walk on.

C. Consumer Attitudes in Purchasing Meat

A telephone survey was conducted to test consumer attitudes on self-service and clerk-service, and to reveal differences in the buying habits of people with varying incomes. The study was carried out at four different periods at Columbus, Ohio, during 1954.

1. Consumers have definite buying habits and preferences in purchasing meat. More than 60 percent of the households preferred to buy meat on a butcher or clerk service basis. Approximately one-third preferred to buy meat on a prepackaged or self-service basis. Reasons advanced by each group of purchasers were in agreement with the answers given; ie., where convenience was the primary answer for one group, inconvenience was the answer for the other group.

2. Most of the consumers, irrespective of type of purchase, seemed to be satisfied with the size of cuts obtained from the retail store.

3. A majority of the consumers were satisfied with the information shown on the labels of prepackaged meats, and were able to buy lunch meat in the size package desired.

4. The number of pork chops purchased per package varied by households, but four, five, and six chops per package were mentioned by most of the households.

5. Nearly 65.0 percent of the households or consumers purchased meat only once a week. There was little difference between clerk service or self-service purchases.

6. About 85.0 percent of the households purchased no lamb in the past three months, and 15.0 percent had purchased some lamb. Eighty percent of consumers gave us a reason for not purchasing lamb that they did not like lamb.

7. More than 75.0 percent of the households indicated that the wife made the weekly purchases of meat.

8. More than 55.0 percent of the consumers were located one-fourth mile or less from the market where they purchased meat. Of households using clerk-service, over 60.0 percent lived one-fourth mile or less from the retail meat store. Only 43.1 percent of the households buying on a self-service basis lived within this distance. In the low income groups most of the households lived within one-fourth mile or less. Only 37.0 percent of the high income group lived within this distance of their regular retail meat store.

D. Retail Meat Pricing

The objectives of this section were to determine and evaluate pricing relationships and pricing methods employed by stores retailing meat, particularly prepackaged meat, in Columbus, Ohio during the year 1955.

Data were obtained from 29 retail stores distributed over the city to provide a representative sample. The interviewer entered the meat department of each of the 29 retail stores weekly (primarily on Firday) and personally observed and recorded the selling prices as labeled on the various meat cuts. Little or no additional information was obtained from any individuals employed by the stores.

The general results can be summarized as follows:

1. Meat stores retailed center cut rib pork chops at an average of $.07 per pound lower than center cut loin pork chops.

2. The average retail price for center cut loin pork chops was nearly twice the price of 10-12 pound wholesale pork loins. Center cut rib pork chops averaged 81 percent above the wholesale price of pork loins at Chicago.

3. The Chicago wholesale price of 10-12 pound pork loins averaged 152 percent above live hog prices at Chicago with a range of 119 to 172 percent.

4. All stores within each chain did not always retail the same meat cuts at the same price.

5. Store location in regards to income is not a major factor in pricing meat cuts. Stores which serviced the lower income groups retailed meat of identical "Grade" at a price at least as high as those stores which were patronized by people in the medium and high income groups.

6. Store groups retailed rib end pork roasts at an average of $.10 per pound lower than loin end pork roasts.

7. Stores made their profit on pork roasts on the loin end cut. Without exception, the monthly average price in all stores for rib end pork roasts was $.03 per pound below the monthly average wholesale price for 10-12 pound pork loins, while on the other hand loin end pork roasts averaged $.08 per pound above the wholesale price.

8. The composite price mark-up of the retail cuts derived from a 10-12 pound pork loin averaged 43 percent above the wholesale price.

9. The retail price mark-up for uncooked whole hams averaged 16 percent above the Chicago wholesale price.

10. Independents competed in price more favorably with the chains in retailing beef cuts than they did in pork cuts.

11. The average retail price mark-up for round steak was 118.6 percent above the wholesale price of a wholesale carcass, choice grade, 600-700 pounds, Chicago; for sirloin steak 142 percent and for T-bone steak 190 percent above the wholesale price.

12. Cube steak had the widest total range in price of all the selected retail meat cuts.

13. Retail price mark-up for chuck roast was the lowest of all beef cuts ($.09 per pound or 24 percent).

14. Retail price mark-up on lamb loin chops averaged 160 percent above the wholesale price of a choice 40-50 pound wholesale carcass.

15. Lamb loin chops and leg-of-lamb were the most popular retail lamb cuts merchandized.

16. Lamb is often priced out of the market in many stores.

17. The retail cuts consisting of whole hams, round steak and chuck roasts were frequently merchandised as "loss leaders" by all store groups and were repeated for as many as 18 consecutive weeks. When meat items are advertised, they are either at reduced or loss-leader prices. Rarely was a retail meat cut advertised at regular prices. Store groups may or may not advertise the same retail meat cuts within the same week; and, when the same retail meat cuts are advertised, for the same cuts, prices may vary among the store groups.

18. Significant positive correlation existed between the wholesale and retail price of all selected pork cuts with the exception of uncooked whole hams.

19. A higher degree of relationship was present between the wholesale and retail prices when the retail price lagged by one week behind the wholesale price.

20. Of all selected retail meat cuts the highest correlation between wholesale and retail prices was found in center cut rib pork chops ($r=.9646$) followed closely by rib end pork roast and loin end pork roasts.

21. Rib roast and chuck roast were the only beef cuts that showed any degree of relationship between the two prices.

22. Lowest correlation was exhibited by all retail lamb cuts.

INTRODUCTION

The consumers in the United States spent 32 percent of their food dollar for the purchase of meat and meat products in 1955. The farm value of all meat products consumed in the United States in 1955 was 6.7 billion dollars and the retail value of this same item was 12.6 billion dollars.1/ The difference between the retail value of meat products and the farm value of meat is the price spread, which, in this particular year cited, amounted to 5.9 billion dollars or 46.8 percent of the retail value. These margins are the result of pricing at the different stages in the marketing channels.

Marketing and processing must, in the long run, cover the cost of operating the various marketing agencies. Businesses engaged in marketing, producers and consumers are interested in marketing efficiency.

Retail distribution takes the largest share of the consumer's meat dollar.

If savings are to be effected in the meat marketing system, the greatest opportunities exist in improving efficiency at the retail level.

Procedure

The sample for section I (see page 22) consisted of 211 stores located in eighteen Ohio cities and towns. The data were analyzed by size and type of store which included: (1) Independent, (2) Voluntary chain, and (3) Chain stores. The information collected was obtained by personal interviews with owners and managers of the stores and from store records for the month of May, 1953.

The purpose of section II was to study the sale of meat in Ohio at retail, and meat products in prepackaged forms including the factors which affected these sales. This information was obtained through the use of a personal observation schedule. Data were obtained from 891 retail stores, both chain and independent, located in every major city in Ohio. All stores which were prepackaging meat were included.

1/ The Marketing and Transportation Situation, 1957 Outlook Issue, page 8, United States Department of Agriculture.

The sample procedure used in section III (see page 55) consisted of a telephone survey of 766 consumers in Columbus, Ohio. The purpose was to determine the attitudes toward self-service, prepackaged fresh meat compared with butcher or clerk service. The study was conducted during April, July, September, and December of 1954. In addition to the seasonal aspects, the sample was stratified by income families or households into three groups: (1) low income, (2) medium income, and (3) high income according to the 1950 census of population.

The objectives of section IV were to ascertain and evaluate pricing relationships and pricing methods employed by stores retailing meat, particularly prepackaged meat, in Columbus, Ohio, during 1955. Data were obtained from 29 retail stores distributed over the city to provide a representative sample. The interviewer entered the meat department of each store weekly (primarily on Friday) and personally observed and recorded the selling prices as labeled on the various meat cuts. Also, data for 1955 were compiled on live and wholesale prices for pork, beef and lamb, respectively. The objective was to compare the trend of these prices in order to determine the relationship, if any, which existed between these variables. In addition a brief study was conducted in the stores' meat advertising practices (see page 74).

HISTORICAL

"When the modern retailer is compared with the old time butcher, it is evident that our present methods of meat retailing are really an evolution or an outgrowth of the old time butcher and so-called butcher shop."1/

The change from butcher to retailer began about the middle of the nineteenth century as a result of a combination of reasons, the main one, however, being growth of the United States. As towns and cities expanded, butchers found it increasingly harder to obtain adequate supplies of meat from local sources and due to sanitation requirements were forced to build slaughter houses outside the city limits or else buy dressed meats from other sources.

1/ Schueren, Arnold C.; Meat Retailing, Chicago, Illinois, Vaughan Co., 1927, Chapter 1.

Certain cities, strategically located, developed reputations as key leaders of the packing industry, such as Cincinnati, Ohio, from 1830 to 1865.

In 1870, the refrigerator car made its debut, and at about the same time, methods of mechanical refrigeration became more common. The former butcher was now able to buy dressed meats from the packer, and mechanical refrigeration enabled the packer to market his product more effectively.

The chain stores were first organized in the late 1850's and began to develop rapidly about the time of the close of the First World War, and on into the early 1920's. Independents felt obliged to organize into groups for greater efficiency, and formed voluntary chains or cooperatives, then followed with larger and more complete stores. Chains continued to grow, largely through offerings in the field of perishable foods, then with baked goods, and then on to small household items.

Then in the middle 1940's self-service and prepackaging of meats began to show definite promise as a profitable method of retailing.

"Many think prepackaging will be more accepted in the meat industry than in the produce industry. Meats, like fresh fruits and vegetables, have various degrees of consumers acceptance and, also like fresh produce, are "Customer Attractors" for the individual retail stores."

"Frozen meats are another possibility for increased use of prepackaging. Frozen meats, presently a small proportion of total meat sold, will probably increase; but the extent is difficult to predict."1/

1/ Mitchell, Glen H., and Sherman, Ralph W., History of Prepackaging Fresh Fruits and Vegetables, Department of Agricultural Economics and Rural Sociology, Department Mimeograph Series No. A. E. 254, Ohio Agricultural Experiment Station, Wooster, Ohio, Pages 14-16.

SECTION I [1]

General Meat Retailing Practices

The initial sample for this section of the study was drawn by the Agricultural Statistician of Purdue University, Lafayette, Indiana.[2] All the cities and towns sampled were selected from 1950 census data with probability in relation to the size of the cities. The primary difference in sampling procedure occurred in cities larger than 500,000 population, compared to cities under 500,000 population. Ohio had one city in the sample, Cleveland, with a population larger than 500,000. In Cleveland, a complete numbered listing of stores was obtained for the city, and the stores were stratified into nationality, race and economic regions, with the sample drawn in proportion to the number of stores in each region.

In cities under 500,000 there was no stratification required. A complete listing of the meat stores in each city was obtained and a sample drawn for each city based on a sampling rate. Eighteen Ohio cities were included in the over-all sample. The locations of the unstratified sample cities are shown in Chart A.

The sample, consisting of 211 stores, was analyzed by size and three types: (1) Independent, (2) Voluntary Chain and (3) Chain stores. At the time of this study a chain of stores was defined as "four or more stores in the same general kind of business operated under a central management."

Independent stores, for the purposes of this study, were defined as "owned and operated exclusively from three or less stores in the same general kind of business." This means that one ownership might include three stores.

A voluntary chain store is an independently owned store, but operated in conjunction with three or more other stores in performing one or more retailing functions such as buying wholesale cuts of meat, advertising, delivery, etc. Such associations of in-

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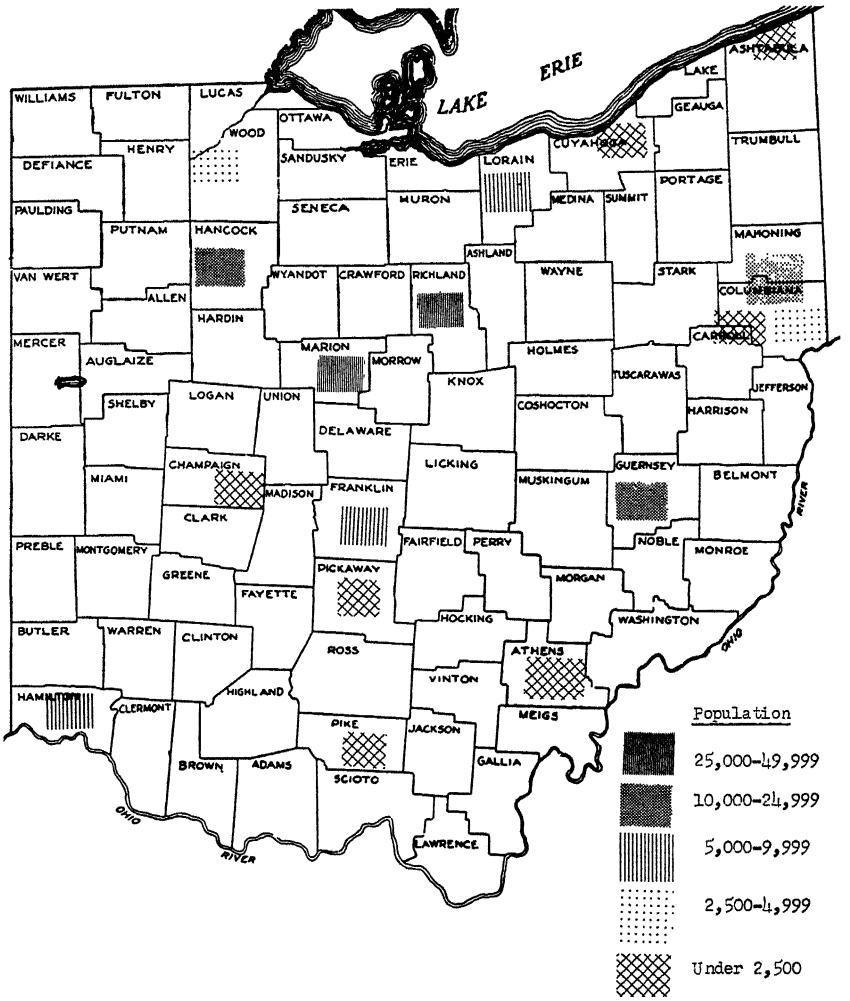
1/ Stout, Thomas Taylor, Master's Thesis, "Retail Meat Marketing in Ohio" Ohio State University, 1954 gives more detailed information on the subject for those who may be interested.

2/ The sample was drawn for the North Central States plus Kentucky. See North Central Regional Publication Number 55.

CHART A

Location of all Unstratified Sample Towns in Ohio, May, 1953.



Source: Original Data.

dependent stores are usually formed to enjoy the efficiencies associated with large scale operations, and enable small independent stores to compete more favorably with the chains.

The sample was also broken down by size of store. Size was arbitrarily determined by the total pounds of all meat handled by the meat department in one month. The result was a breakdown into twelve classes of size, the smallest being designated as "under 1,000 pounds" and the largest "40,000 pounds and over." Such a breakdown resulted in the following distribution:

	Independent	Voluntary Chain	Chain	Total
Under 1,000	19	0	0	19
1,000 - 1,999	27	1	0	28
2,000 - 2,999	30	0	0	30
3,000 - 3,999	18	4	0	22
4,000 - 4,999	14	2	0	16
5,000 - 7,499	35	5	0	40
7,500 - 9,999	11	2	1	14
10,000 - 14,999	4	6	2	12
15,000 - 19,999	8	0	2	10
20,000 - 29,999	2	1	4	7
30,000 - 39,999	4	0	6	10
40,000 - and over	0	0	3	3
Total	172	21	18	211

The information gathered from these retailers was obtained by personal interviews with owners and managers of the stores and was taken from the records of the store for the month of May, 1953. During that month, these 211 stores handled 1,708,846 pounds of meat. This included all beef; fresh and cured pork; veal; lamb; sausage or luncheon meats; variety meats, such as heart, liver, tongue, etc.; poultry and fish.

The 172 independent stores constituted over 80.0 percent of all stores sampled. These independent stores handled only about 55.0 percent of the total volume. Similarly, the voluntary chain stores constituted about 10.0 percent of the total number of stores and handled 9.3 percent of total volume. Chains constituted only slightly over 8.0 percent of total number of stores but

handled nearly 35.0 percent of the total pounds of meat for the month of May, 1953.

These percentages are a good indication of the relative importance of three types of stores in meat retailing in Ohio. Some questions naturally arise, concerning volume and relative importance of these three types of stores.

This section answers these and similar questions pertaining to Retail Meat Marketing in Ohio.

Physical Facilities

All but the very smallest meat departments were equipped with a meat display case, although extremely small stores may handle only cold cuts and possibly store them and sell them directly from a small refrigerator. Generally, both small independent and large chain stores have one or more cases in varying combinations of service, self-service and freezer cases. In many small stores, service cases may display large quantities of eggs and dairy products as well as meat. The larger stores nearly always use virtually the entire case for meat.

Meat held for storage in the store before it entered the display case was kept in a large walk-in type refrigerator. Very small stores do not ordinarily have such equipment, but it is virtually a necessity in all other meat departments. The overall range in size of coolers was from 10 to 418 square feet of floor space with the average 80.0 square feet. The average chain store, however, had slightly over twice this amount of cooler space.

Average floor space of the meat department for all Ohio stores was 441.4 square feet, Table 2, 29.1 percent of the entire floor space.

Meat sales accounted for 38.5 percent or nearly 2/5 of the total income of the store.

The independent stores had an average floor space in the meat department of 404.1 square feet, 30.9 percent of the total floor space; and meat sales accounted for 40.1 percent of the total income of the store. Voluntary chains had an average of 387.1 square feet per meat department, 21.5 percent of the total floor space; income per meat department representing 32.1 percent of total sales. Chain units had an average of 861.2 square feet per meat department, 20.8 percent of the entire floor space and meat sales were 30.2 percent of total sales.

TABLE 1

Number and Percent of 211 Ohio Retail Stores Participating in Study by Type of Store and by Type of Ownership, May, 1953.

Type of Ownership	Independent		Voluntary Chain		Chain		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Single Proprietorship	144	83.6	16	76.2	1	5.6	161	76.4
Partnership	24	14.0	5	23.8	0	0.0	29	13.7
Cooperative	2	1.2	0	0.0	1	5.6	3	1.4
Corporation	2	1.2	0	0.0	16	88.8	18	8.5
Total	172	100.0	21	100.0	18	100.0	211	100.0
Percent	81.5		10.0		8.5		100.0	

Source: Original Data

TABLE 2

Average Floor Space Size and Range in Floor Space of Meat Departments for 211 Ohio Retail Stores May, 1953.

(Size in square feet)

Type of Store	Number Stores	Size in square feet	
		Average	Range
Independent	172	404.1	32-2500
Voluntary Chain	21	387.1	50-1350
Chain	18	861.2	328-2500
Total or Average	211	441.4	32-2500

Source: Original Data

Meat Buying Practices

The owner or manager may purchase meats from any number of wholesale sources or, occasionally, he has livestock slaughtered under his own supervision. The amount of meat supplied through such slaughtering processes is negligible in Ohio. The major sources of meats in the regular market channels are:

1. Packinghouse Cooler - A packinghouse cooler is a temperature controlled storage facility for preserving meats, located at the packinghouse (slaughterhouse). Prospective buyers visit the packing house cooler and select wholesale cuts of meat.

2. Packer-owned Branch House - A branch house is owned by the packing company to which meats are sent for distribution to retail meat dealers. Some processing of meat, but no slaughtering may take place in such an establishment.

3. Packer or Peddler Truck - An operator of a packer truck or individual peddler truck route calls on the retail trade and sells meat direct from the truck to retailers.

4. Independent Wholesale House - At an independent wholesale house, retailers purchase by personal inspection or by description.

5. Distributing Agencies - Owned by the retailing organization (chains and voluntary chains).

The retailer buys through these sources either by telephone order, by personal inspection or by ordering through a salesman representing the supplier. If the retailer buys after personally inspecting the product, he is said to have bought by "inspection." This would be a burdensome and inconvenient means of purchasing meat, if it were necessary to secure the desired quality. To eliminate this inconvenience and risk is one reason why meat is graded. Meats are classified according to quality by means of grades specified by the Federal government, brand names applied by the packer.

The advantage of federal grades and packer brands is that quantities of meat may be purchased without seeing the product, but by "description" of the meat by quoting the grade of brand. The grades and brands are standardized and understood within the meat trade. The federal grades, impartially designated by the government, have the advantage in that they are the same

throughout the nation. Packer brands will vary with different packing concerns. Also, packer brand names are designed to appeal to the consumer and have advertising as one objective rather than unbiased grading of the products.

The most popular source of supply was purchase through meat salesmen; 57.2 percent of all meat was purchased by this method. Second in importance was the telephone order, by which 24.9 percent of all meat reached the stores. Purchases by insepction at packinghouse coolers, independent wholesale houses, and packer branch houses accounted for 15.7 percent of the total volume. The remaining negligible amount was obtained from packer or peddler trucks or by slaughter.

In summary, purchases by description were by far the most popular, accounting for from about 80.0 percent to 85.0 percent of all fresh meat (beef, veal, and lamb - pork has no federal grades) purchases.

On beef, veal, and lamb, federal grades as a basis of description were the most favored, even if the meat was purchased by inspection. Of all veal purchased, 52.3 percent was federal graded; lamb, 68.7 percent; and beef, 66.6 percent. Of the five federal grades of quality (prime, choice, good, commercial, and utility) choice and good were the most popular.

All chain stores kept their meat department records separate. Only 31.0 percent of the independent stores followed this practice.

The small retailer offers credit because he has traditionally done so. Chain stores do not offer credit. Their appeal to the public is large volume and wide range of selection and a pleasant environment in which to shop. The average independent with his much smaller volume finds that one of his most powerful means of competition with large chains and large independents is to offer credit. Approximately one-fourth (23.2%) of the total volume of all independent meat sales were credit sales. About the same was true of voluntary chains. Generally, as store volume decreased, the percent of credit sale in relation to sales increased.

Kinds and Grades of Meat Handled

Beef and pork constitute 48.0 percent and 25.2 percent of total volume respectively. Third in importance during May, 1953, were the sausage meats which accounted for 11.7 percent of the total volume. The remaining amount was made up of poultry (6.7 percent), lamb (1.6 percent), veal (3.7 percent, and fish (1.3 percent).

As indicated in Table 3, beef had nearly twice the volume of pork; however, this was not directly in accordance with slaughter figures during that time.[1] The reason may be that many small retailers cut their pork volume as warm weather approached.

TABLE 3

Weight and Percent of Total of Types of Meat Handled, by Type of Store for 211 Ohio Retail Stores, May, 1953.

Type of Meat	Independents		Voluntary Chain		Chain		Total	
	lbs.	Per-cent	lbs.	Per-cent	lbs.	Per-cent	lbs.	Per-cent
Beef	463,643	48.7	80,586	50.5	275,768	46.2	819,997	48.0
Pork	240,575	25.2	37,932	23.9	151,509	25.4	430,016	25.2
Veal	38,446	4.0	3,962	2.5	20,167	3.4	62,575	3.7
Lamb	16,372	1.7	2,980	1.9	8,462	1.4	27,814	1.6
Sausage Meats	114,569	12.0	19,520	12.3	66,030	11.1	200,119	11.7
Variety Meats	19,940	2.1	2,480	1.6	8,654	1.5	31,074	1.8
Poultry	49,119	5.2	9,535	6.0	56,051	9.4	114,705	6.7
Fish	10,793	1.1	2,038	1.3	9,715	1.6	22,546	1.3
Total	953,457	100.0	159,033	100.0	596,356	100.0	1,708,846	100.0
Percent	55.8	---	8.3	---	34.9	---	100.0	---

Source: Original Data

Variety meat, which includes such items as heart, liver, tongue, brains, sweet bread, kidneys, etc., constituted a negligible amount in all types of stores, never more than 2.1 percent of volume and averaging about equal to lamb volume for all stores. Stores seldom made a special effort to keep large stocks of such meats, but instead, purchased through their suppliers in special orders, or sold only variety meats which resulted from cutting up whole or half carcasses which they had purchased.

1/ During the month of May, 1953, there were 1,808,300 cattle or (1,717,885,000 pound live) cwt. and 4,562,200 hogs or (1,090,365,800 pound live) cwt. slaughtered in the United States.

Beef and pork constituted the bulk of the meat department trade for the average or large store.

This was not true, however, for the smaller stores, especially the independently operated establishments. Visits to these stores emphasized the importance of sausage meats as a mainstay to the existence of the smaller store.

Independent and voluntary chain stores bought federal grade good beef and veal most frequently, followed closely by choice. These stores bought choice lamb and good lamb in lesser quantity. These two grades of meat were so popular that purchases of other grades were rather negligible. The majority of the fresh meats sold by chain stores were of choice quality.

See Table 4 for grades purchased.

Sales and Income

Saturday was, by far, the most important sales day, handling, on the average for all stores, 33.6 percent of the total volume (Table 5).

The trend to increased volume of meat sales as the week progressed was not as noticeable among the smaller stores. The very smallest stores, the type that depended to a large extent on cold cuts as the mainstay of their business, were generally open on Sunday. These stores did a surprisingly large amount of their business on that day, often having a volume that was equal to the other days of the week, excluding Saturday.

TABLE 4

Grades of Beef, Veal, and Lamb Handled by 211 Ohio Retail Stores, by Type of Store, May, 1953.
(Percent)

Grade	Independent			Voluntary Chain			Chain			Total		
	Beef	Veal	Lamb	Beef	Veal	Lamb	Beef	Veal	Lamb	Beef	Veal	Lamb
Prime	3.3	3.7	6.1	5.0	15.4	25.0	2.9	--	--	3.5	4.7	7.3
Choice	36.0	35.8	40.9	51.2	61.5	50.0	67.2	74.5	82.0	39.7	42.5	47.4
Good	51.0	54.3	51.2	35.2	15.4	25.0	22.9	25.5	18.0	47.4	47.0	44.0
Commercial	8.7	6.2	1.8	7.5	7.7	--	6.3	--	--	8.4	5.8	1.3
Utility	1.0	--	--	1.1	--	--	0.7	--	--	1.0	--	--
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Original Data

TABLE 5

Comparative Importance of Days of the Week as to Percent of Weekly Sales Volume of 211 Ohio Retail Stores by Type of Store, May, 1953.

Type of Store	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun.	Total
Independent	9.0	10.8	9.3	12.3	20.6	33.9	4.1	100.0
Voluntary Chain	10.0	10.4	10.1	12.4	21.4	32.2	3.5	100.0
Chain	8.1	8.2	8.5	12.8	26.9	34.5	0.1	100.0
Average	9.1	10.5	9.4	12.4	21.2	33.6	3.8	100.0

Source: Original Data

SECTION II [1]

Self-Service Meat Practices

Service versus Self-Service Method

The start of the self-service meat department created many problems in food stores. The old practice of stacking meat as high as it could be piled was soon found to be impractical. By the time the customers decided what they wanted, much of the meat had to be rewrapped, or due to handling and time the meat turned dark and could not be sold satisfactorily.

Those pioneering in self-service meats had the advantage of years of service meat marketing upon which to draw. Remodeling meat departments and revising operations were problems. Finding a suitable method of wrapping the meat has presented a problem which has not been solved satisfactorily to this day. The risks and expenses were large in the early days of self-service meat retailing. Only by trial and error and intensive research and cooperation between the food industry and the technical firms were many of these problems solved.

The purpose of this section was to study the sale of meat products in prepackaged forms, and the factors which affected these sales. Information was obtained on the percentage of meat and meat products sold in prepackaged form and what factors determined this distribution. Information was obtained also as to the place where the prepackaging was performed, the type of package, placing of labels, machine or handwrapping of packages, use of trays or flat boards, quality comparisons, rewraps, etc. [2]

Data were obtained from 891 retail stores, both chain and independent, located in practically every major city in Ohio, and included every county seat town. All stores which were prepack-

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1/ Lewis, James H., Master's Thesis, Merchandising Methods Employed in Retailing Prepackaged Meat in Ohio, The Ohio State University, 1954, gives more detailed information on this subject for those who may be interested.

2/ A personal observation questionnaire was used in obtaining the information used for this study. This meant that the interviewer entered the meat department of a retail store and personally observed its operations. The study included little information which was obtained from any persons employed by the various stores.

aging meat were included in the study. Of these 891 stores contacted nearly 48.0 percent or 422 stores have meat departments self-servicing fresh meat. A self-service store is commonly thought of as a store where the customer can obtain a complete line of goods without the benefit of clerk help, with primary contact being made with the store employee at the check-out counter. If special services are desired by customers, clerk help is usually available. The information in this section is from observations made at the 422 stores which had at least a partial or 100 percent self-service meat department.

Stores represented in this study were separated into chains and independents. Chains constituted 85.0 percent of the total stores. Independents made up the remaining 15.0 percent.

Percent of Meat Self-Serviced to All Meats

"Percent of meat self-serviced to all meats" refers to the practice of providing some service by clerks or meat cutters in addition to the self-servicing method. Ninety and one half percent of the stores had a range of 75 to 100 percent of their meat departments on a self-service basis; 6.4 percent had self-service meat departments ranging from 50 to 75 percent self-service and the remaining 3.1 percent of the stores had meat departments under 50 percent on a self-service basis. 83.4 percent of the total stores had 100 percent self-service meat departments and 16.6 percent had a combination self-service and service type meat department.

Special Services for the Consumers

Consumers had the privilege of ordering any special meat cut desired in 72.4 percent of the stores.

Hostess Servicing Self-Service Meat Cases

Hostesses were tending self-service meat cases in 53.6 percent of the stores. Hostesses placed the prepackaged meat in position, maintaining orderly display cases, helping customers locate meat cuts, removing torn and dislabeled packages from the display cases, etc.

Advertising Techniques

Most of the advertising was on signs posted in the meat department. A few examples read as follows: "Fish Special," Sale on Lard," Poultry Special," and "Lamb Special." Other signs pro-

moted a particular cut of meat such as: "Chuck Roast Special," "Special on Ground Meat," and "Sausage Special."

A large percentage of the signs were posted during the latter part of the week, beginning on Thursday and carrying through until closing time Saturday. A high percentage of retail meat sales occurs on these three days.

Other signs encouraged the customers to continue purchasing their meat at that particular store. Examples of such signs were: "Meat prepackaged daily for your convenience at no extra cost," "We grind our beef hamburger every hour, double your money back if not satisfied," "Just ask hostess for any special cut of meat," etc.

Discoloration of Meat Cuts

Discoloration of some meat cuts were detected in some stores. The cuts most commonly found with discoloration were sirloin steaks, chuck roasts, T-bone steaks, round steaks, rib-roasts, cube steaks, sirloin tip steaks, rib steaks, and porterhouse steaks.

Preventing discoloration in retail sirloin steak cuts apparently was the most difficult, since discolored packages of this cut were present in almost one-third of the total stores. Stores were having more difficulty in preventing beef cuts from discoloring than they were with veal, pork and lamb cuts.

Physical Facilities

Length of Self-Service Meat Cases

There was a wide variation in the length (feet) of self-service display cases in meat departments. Over one-third were using from 25 to 49 feet of self-service cases, while nearly another one-third were using from 50 to 74 feet.

Lighting of Self-Service Meat Cases

Over 70.0 percent of the stores were using neon lights attached to the self-service meat display cases. These racks were placed at distances from the meat on the trays or rakcs in the display cases varying from 8 inches to 3 feet 6 inches.

Various methods were employed by the stores to prevent the light from discoloring the meat.

Intense light is one of the causes for meat to become discolored. The trend, today, is toward getting the light away from the meat, but focusing attention on the meat by use of recess spots or extended spots from the ceiling.

Self-Service Meat Display

Methods of Display

Meat may be displayed by species (all beef cuts in one part of the case), by type of cut, or a combination of both.

Type of cut was another method, which consists of displaying steaks in one part of the case, roasts in another, regardless of the species of animal from which they came.

The most popular was by species with more than 80.0 percent of the stores using this method.

Meat Placed in Display Flat, Shingle, on Edge, or in Combination.

Meat packages were being displayed flat in the self-service cases in 71.0 percent of the total stores. Another important method of placing meat in display cases was by shingling (overlapping the meat packages), which 21.6 percent of the stores were using. Meat placed on edge (meat packages in an upright position) in the display cases was observed in only 4.7 percent of the stores. Some stores placed fresh meats flat in the case and smaller cuts such as luncheon meats either on edge or in a shingle fashion.

When the meat was displayed flat in the self-service cases, the display was less mixed by consumer handling.

Special Practices

Methods Used in Prepackaging Ground Beef and Liver

Cardboard containers wrapped with transparent film paper were used by 88.4 percent of the stores in packaging ground beef. Other stores handled all their hamburger or ground beef through a service-counter especially adapted for that type of cut.

To display liver in prepackaged form required special care. Liver, after a period of time, begins to seep and causes an undesirable looking package. More than 16.0 percent of the stores attempted to avoid this problem by displaying liver in a heavy cardboard container which resembled a cottage-cheese box.

Some stores (about 20 percent) were avoiding this problem. Either they did not sell liver or they were selling it by the service method. Liver is being prepackaged by 63.2 percent of the stores in cardboard containers, double wrapped with a single thickness of film paper.

Labels and Packages

Types, Position, and Legibility of Labels

Stores were either using plain labels or brand identification labels on or in the meat packages in the self-service cases. The plain labels gave the consumer such information as the store's name, the name of the meat cut, weight of package, price per pound, the net price of the package, and sometimes, the grade. In addition to this information, the brand identification label indicated the packers from which the meat was purchased. Few labels informed the consumer the date when the meat cuts were prepackaged. Some stores did place on the label the date of the package, in code; and a few other stores actually stamped the date on the label or on the film wrap.

Most stores were purchasing the luncheon or smoked meats directly from packers in prepackaged form, therefore, the packages of these meats contained the brand identification label.

Approximately one-half of the stores were placing the label on the inside and the other half on the outside of the meat package. There appeared to be two advantages for placing the labels on the inside of the packages. One is that the labels do not have to be fastened to the package, and the other is that the consumer cannot switch labels on the meat package.

The information on the labels of at least 90.0 percent of the stores was legible and could be read by the consumers and easily understood.

Printing the information on the meat labels was accomplished by stenciling machines, by stamping machines, and by hand printing. The stenciling machine was the most common method used.

Torn Packages

Since its beginning, one of the most perplexing problems encountered in the self-service retailing of meat has been the packaging material, because of the ease in which it could be torn. The problem of torn meat packages has been solved to a large extent by the increased use of a film paper which is relatively tear resistant. In the total stores, 93.5 percent had no torn packages in their display cases.

Methods Used in Sealing Meat Packages

Meat packages were commonly sealed by hand sealing irons. Few stores had the semi-automatic sealing machines at the time of this study.

Some Cost and Profit Considerations 1/

Gross Profit

Forethought, experience and accuracy are necessary to achieve a consistent gross profit. Uncontrolled situations such as power failure or bad weather may upset sound management practices.

Items which can be controlled in the store and help provide a constant and desired level of gross profits are:

1. Ordering of meats. Over-ordering a poor selling item can cause a 1 to 2 percent drop in gross profit.

2. Manner of merchandising - displays and types of cuts is a factor.

3. Receiving and weighing, incorrect billings, resulting in overcharges or shortages, reduce gross profit.

4. Trimming and conditioning of meat. Chain stores run many tests to determine the best way to trim meat.

5. Cutting on a daily basis; shrinkage and need for conditioning of meat will be decreased if meat is prepared on a day to day basis.

1/ Gifford, Allan H., Master's Thesis, "Operating Costs and Gross Profit Factors in Retail Meats", Ohio State University, 1955, gives more detailed information on the subject for those who may be interested.

6. Proper identification at the cash register. A canned ham credited to groceries is the same as a ham stolen as far as gross profit for meats is concerned.

7. Theft by store help. Store rules requiring employees to have all meat purchases initialed can curb employee dishonesty.

Many stores have too little display space which prohibits attractive arrangements of the different meats. Also, in such situations the case must be filled more often. Lack of space may reduce shrinkage because it limits cutting and putting meat in the display cases too far in advance of the time it is picked up by the consumer.

Operating Costs

Labor constitutes approximately 70.0 percent of the total cost. The other 30.0 percent of operating costs consists of heat, light, rent, depreciation, wrapping supplies, laundry, etc. The best way to allocate labor to get the highest return is difficult. What may be best for a $10,000 a week self-service meat department will not serve most small $1,000 a week service departments. However, several general rules apply to all size departments: (1) Hire a minimum of higher paid meat cutters. Try to layout the work so that the meat cutters are fully employed all the time. Lower paid clerks can do much of the work usually done by meat cutters. This is particularly important during the rush hours. Part-time help properly used can lower operating costs.

Some factors which influence the labor requirements are: (1) The rush hours, amount of service provided; (2) Number of times per week and days on which meat is received; (3) Arrangement of the meat department and type of equipment used. Concentrated week-end shopping by the consumer has made the use of additional labor necessary at certain peak periods of the day and week.

If operating costs in the meat department are consistently high, and the exact cause is unknown, then an evaluation of each cost item should be made. Many times the trouble can be located by merely watching the daily procedure, noting the unnecessary waste or improper use of materials.

Operating Costs of Service versus Self-Service Meat Department

The major difference in operating costs is that in the service type meat department, high priced meat cutters perform all the necessary functions whereas in the self-service meat departments much of the work is done by lower paid clerks.

A store's meat sales should reach 5,000-8,000 pounds per week, before attempting self-service operation. This minimum varies between stores. Lower volumes make the initial outlay and maintenance costs too large to permit a satisfactory return on the investment over a long period of time, and limits any advantage associated with labor specialization.

SECTION III

CONSUMER ATTITUDES IN PURCHASING MEAT

Meat retailing in Ohio has changed considerably since World War II. The small independent corner grocery store faces keener and keener competition. Ownership turnover among small units is high and the mortality rate even higher.

Chains, voluntary chains, and independent markets in Ohio are now being relocated relative to income and population shifts that have occurred since World War II.

With the rapid growth of super markets in Ohio has come self-service meat departments. What are consumer attitudes toward self-service prepackaged meats compared with clerk or butcher service? What are the common practices of super markets regarding self-service meat departments? This section of the study is designed to answer these questions.

Although super markets led in adopting self-service meat departments, a large volume of meat business is still done through service counters in numerous grocery stores of all sizes.

Sample Procedure

A telephone survey of 766 consumers in Columbus, Ohio revealed attitudes toward self-service, prepackaged fresh meat compared with butcher or clerk service. This study was conducted during April, July, September, and December of 1954. In addition to the seasonal aspects of the study, the sample was stratified by families or households into low income group, medium income group, and high income group. Using the 1950 census of population and the median income, the class intervals are as follows:

Low income - under $3000

Medium income - $3000 to $3699

High income - $3700 and up

The study was made at four different times to see if consumer attitudes changed during the year. The over-all results indicate that there is no significant difference in consumer attitudes between seasons.

Meat Purchases - Self-Service or Clerk Service

The first question asked was: "How did you purchase your fresh meat in the past two weeks?" Nearly 30.0 percent of the consumers purchased their meat on a prepackaged (self-service basis) as shown in Table 6. More than 62.0 percent of the consumers bought meat from the butcher or clerk, and slightly less than 8.0 percent used a combination of both.

The analysis on the basis of income showed similar results with only about one-third of the consumers preferring prepackaged meat.

TABLE 6

Methods of Meat Merchandising Used by Consumers in Purchasing Fresh Meat by Periods in Columbus, Ohio, 1954.

Method of Meat Merchandising	April	July	Sept.	Dec.	Total
	No. %	No. %	No. %	No. %	No. %
Prepackaged (Self-Service)	41-32.5	64-30.5	57-26.3	65-30.5	227-29.6
Butcher or Clerk Service	79-62.7	122-58.1	150-69.1	128-60.1	479-62.6
Combination	6- 4.8	24-11.4	10- 4.6	20- 9.4	60- 7.8
Total Percent	100.0	100.0	100.0	100.0	100.0
Tot. Consumers	126	210	217	213	766

Source: Original Data.

Reasons Advanced for Purchases

Persons who purchased their fresh meat on a self-service basis, gave as the main reasons for purchase in this manner: (1) convenience, (2) variety, and (3) can inspect the meat closely, as shown in Table 7. Convenience was preferred more by the low

income groups than by the medium and high income consumers. The high income groups mentioned variety more frequently than the low income groups. In addition, the high income groups buying meat on a self-service basis wanted to inspect the meat more closely and wanted independent selection much more than the lower income groups.

TABLE 7

Reasons Advanced for Purchasing Fresh Meat on a Prepackaged Basis, Columbus, Ohio, 1954

Reasons	April	July	Sept.	Dec.	Total for 4 months
Convenience	22.5	37.2	56.1	43.6	38.7
Variety	18.4	15.5	1.3	7.9	11.7
Cleanliness	2.0	2.3	14.7	7.9	6.0
Price Appeal	2.0	4.7	4.0	7.9	7.9
Store Influence	2.0	.8	1.3	3.9	2.0
Likes Packaging	10.2	5.4	8.0	7.9	7.7
Can Inspect Meat Closely	17.4	13.9	---	8.9	10.9
Independent Selection	14.3	10.9	4.0	1.0	7.9
Miscellaneous	11.2	9.3	9.3	11.0	10.4
Total Percent	100.0	100.0	100.0	100.0	100.0
Total Reasons Advanced	98	129	75	101	403
Number of Consumers	41	64	47	65	227

Source: Original Data

Conversely the consumers who purchased self-service meat were asked why they didn't purchase meat from a butcher or clerk service meat store. The two main reasons stated were the inconvenience and lack of selection in a clerk service store. In addition, the consumers stated that they did not like to stand in line when purchasing meat from a butcher or clerk.

Table 8 indicates the reasons advanced for purchasing fresh meat in a clerk or butcher service store. There was little difference between the four periods with freshness and convenience being the two reasons most preferred by consumers. Another reason advanced was that they had always bought this way. The low income groups preferred convenience much more than did the high income groups. The higher income groups put better quality and freshness high on their list of reasons for buying meat in this manner.

Inversely, these same clerk service purchasers were asked why they did not purchase fresh meat on a prepackage self-service basis. The most common reasons stated were the inconvenience of purchasing meat on a self-service prepackage basis followed by the comment, "can't see meat on all sides." The lower income groups indicated inconvenience as the main reason why they did not purchase meat on a prepackaged self-service basis, while more emphasis was put on, "can't see meat on all sides", by the higher income groups. In addition, the higher income groups stated that they could not get the proper sized cut many times.

Purchasing the Desired Size of Cut

The consumers who purchased meat on a self-service basis were asked the question if they could buy the size beef and pork cuts desired. Ninety-two percent of the consumers indicated that there was no problem in buying the size of beef cuts desired. The replies were nearly the same for pork cuts (90.0 percent).

Label Information

Another question asked the consumers who purchased meat on a self-service basis was, Were you satisfied with the information shown on the labels of prepackaged meat. More than 90.0 percent of the consumers indicated satisfaction with the information on the labels.

TABLE 8

Reasons Advanced For Purchasing Fresh Meat
on a Clerk Service or Butcher Basis
Columbus, Ohio, 1954

Reasons	April	July	Sept.	Dec.	Total
Likes Butcher	12.6	7.9	5.2	3.5	7.3
Price Appeal	1.7	3.7	4.8	2.3	3.2
Selection and Variety	6.1	3.3	.5	4.7	3.5
Freshness	20.3	19.1	23.8	18.6	20.5
Convenience	10.4	15.4	27.6	27.3	20.0
Always Bought This Way	7.1	10.4	12.9	15.1	11.3
Personal Service	5.5	8.7	.5	2.9	4.6
Better Quality	14.3	10.4	5.7	5.2	9.0
Can Get Right Size Cut	3.3	7.9	4.8	1.7	4.7
Can See Meat Cut	5.5	6.2	.9	6.4	4.7
Can See Meat Weighed	7.7	2.9	---	1.2	2.9
Miscellaneous	5.5	4.1	13.3	.11.1	8.3
Total Percent	100.0	100.0	100.0	100.0	100.0
Total Reasons Advanced	182	241	210	172	805
Number of Consumers	79	122	150	128	479

Source: Original Data

Displays

Meat is displayed on edge, flat, and over-lapping. Seventy-five percent of the people who purchased meat on a self-service basis stated that they were satisfied with any one of the three methods mentioned. Nearly 20.0 percent of the people preferred display to be flat. The high income groups preferred the flat method of display more than the lower income groups.

Lunch Meat Sized Packages

Consumers purchasing prepackaged self-service meat were asked whether they were able to buy lunch meat in the size package desired. Eighty-five percent of the consumers (with no significant differences between high and low income groups) stated that they were satisfied with the size packages now on display.

Number of Pork Chops Per Package

The consumers were asked the number of pork chops per package normally bought by the self-service method, with the following results as presented in Table 9. This study showed that 4, 5, and 6 chops were preferred (57.3 percent). On an income group basis, practically the same pattern was found, but the higher income groups included 3 chops as one of the most common sized packages in their purchases.

TABLE 9

The number of Pork Chops Per Package Normally Bought by Self-Service Prepackaged Purchasers of Fresh Meat Columbus, Ohio, 1954

Number of Pork Chops Per Package	April	July	Sept.	Dec.	Total
None	9.8	21.9	---	12.7	11.9
One chop	---	---	---	---	---
One-two chops	---	---	---	---	---
Two chops	---	4.7	3.9	2.8	3.1
Three chops	9.8	12.5	17.7	9.9	12.3
Three-four chops	---	4.7	13.7	14.1	8.8
Four chops	21.9	17.2	23.5	22.5	21.1
Five chops	21.9	17.2	17.6	19.7	19.0
Five-six chops	---	3.1	5.9	2.8	3.1
Six chops	26.8	17.2	15.7	12.7	17.2
Seven or more chops	9.8	1.5	2.0	2.8	3.5
Total Percent	100.0	100.0	100.0	100.0	100.0
Number of Consumers	41	64	57	65	227

Source: Original Data

Lamb Purchases

The consumers were asked if they had purchased any lamb in the past three months. Eighty-five percent of the consumers answered, "No," and 15.0 percent of them answered, "Yes." The self-service vs. the clerk or butcher service lamb purchases revealed similar percentages in the "Yes" and "No" categories, as shown in Table 10. When asked: "Why don't consumers purchase lamb more often?", nearly 78.0 percent of the consumers stated that they did not like lamb. Other miscellaneous reasons were: price too high and not available or on display. Analysis by income groups revealed no significant difference in the percentages buying lamb.

Who Purchased the Meat

Within families in Columbus, Ohio, 76.0 percent of the time the wife did the meat purchasing for the household and nearly 20.0 percent of the time the husband was the one who did the meat purchasing. The remaining purchasers were divided between the daughters and sons of the households.

TABLE 10

Consumers Purchasing and not Purchasing Lamb in Columbus, Ohio, by periods, 1954

Lamb Purchases	April (%)	July (%)	Sept. (%)	Dec. (%)	Total (%)
Yes	13.5	10.0	19.7	16.0	15.0
No	86.5	90.0	80.3	84.0	85.0
Total Percent	100.0	100.0	100.0	100.0	100.0
Total Consumers	126	210	217	213	766

Source: Original Data.

Nearness to Store

Tables 12 and 13 indicate that generally consumers who purchased meat on a self-service basis travelled farther for their purchases than consumers purchasing meat from a clerk service store or butcher. Table 14 shows low income households, about 63.0 percent of them were located within one-fourth mile, or less, of the store where they purchased meat compared to 37.0 percent of the high income people. This table also shows that in the 1 to 2 miles category the high income groups travelled longer distances to purchase meats than the low income groups.

TABLE 11

Members within Families Doing the Meat Buying in Columbus, Ohio, by Periods, 1954

Member Within Family	April (%)	July (%)	Sept. (%)	Dec. (%)	Total (%)
Wife	76.2	75.2	76.1	77.0	76.1
Husband	13.5	18.6	20.6	18.8	18.4
Son	.8	1.9	.5	.9	1.1
Daughter	.8	2.4	2.8	1.9	2.1
Single Adult	6.3	1.9	---	.9	1.8
Other	2.4	---	---	.5	.5
Total Percent	100.0	100.0	100.0	100.0	100.0
Total Consumers	126	210	217	213	766

Source: Original Data.

TABLE 12

Consumers Purchasing Meat at Clerk Service Stores in Relation to Distance from Store in Columbus, Ohio, by Periods, 1954

Distance from Store	April (%)	July (%)	Sept. (%)	Dec. (%)	Total (%)
1/4 mile or less	54.4	56.6	72.0	53.9	60.4
1/2 mile	13.9	12.3	11.3	19.5	14.2
3/4 mile	12.7	9.0	---	1.6	4.8
1-2 miles	11.4	15.6	6.0	10.1	10.4
2-3 miles	1.3	1.6	2.7	8.6	3.8
3-4 miles	2.5	4.1	3.3	1.6	2.9
4-5 miles	1.3	---	2.0	.8	1.0
5 miles or more	2.5	.8	2.7	3.9	2.5
Total Percent	100.0	100.0	100.0	100.0	100.0
Number of Consumers	79	122	150	128	479

Source: Original Data

TABLE 13

Consumers Purchasing Meat at Self-Service Stores in Relation to Distance from Store in Columbus, Ohio, by Periods, 1954

Distance from Store	April (%)	July (%)	Sept. (%)	Dec. (%)	Total (%)
1/4 mile or less	2.5	42.1	64.9	50.7	43.1
1/2 mile	41.5	9.4	14.1	16.9	18.5
3/4 mile	14.6	6.2	---	6.3	6.2
1-2 miles	29.3	26.6	14.0	21.5	22.5
2-3 miles	2.4	3.1	3.5	3.1	3.1
3-4 miles	2.4	6.3	3.5	---	3.1
4-5 miles	4.9	---	---	1.5	1.3
5 miles or more	2.4	6.3	---	---	2.2
Total Percent	100.0	100.0	100.0	100.0	100.0
Number of Consumers	41	64	57	65	227

Source: Original Data.

TABLE 14

Consumers Purchasing Meat by Income Classes in Relation to Distance from Store in Columbus, Ohio, by Periods, 1954

Distance from Store	Low Income (%)	Medium Income (%)	High Income (%)
1/4 mile or less	63.2	65.4	37.0
1/2 mile	13.4	9.7	24.3
3/4 mile	1.6	4.7	9.2
1-2 miles	12.6	10.9	20.3
2-3 miles	4.0	4.3	3.6
3-4 miles	3.2	2.3	3.2
4-5 miles	.4	.8	2.0
5 miles or more	1.6	1.9	.4
Total Percent	100.0	100.0	100.0
Number of Consumers	249	257	260

Source: Original Data.

SECTION IV

Retail Meat Pricing

The objectives of this section were to ascertain and evaluate pricing relationships and pricing methods employed by stores retailing meat, particularly prepackaged meat, in Columbus, Ohio, during the year 1955.[1]

Data were obtained from 29 retail stores so distributed over the city as to provide a representative sample. The interviewer entered the meat department of each store weekly (primarily on Friday) and personally observed and recorded the selling prices labeled on the various meat cuts. Little or no additional information was obtained from any individuals employed by the stores.

Retail Prices of the following meat cuts were recorded:

Pork	Beef[2]	Lamb
Center Loin Chops	T-Bone Steak	Loin Chops
Center Rib Chops	Cube Steak	Rib Chops
Loin End Chops	Club Steak	Shoulder Chops
Rib End Chops	Sirloin Steak	Leg-of-Lamb
Loin End Roasts	Round Steak	Loin Roast
Rib End Roasts	Rib Roast	Rib Roast
Whole Hams (Uncooked)	Chuck Roast	Shank Roast
Sliced Bacon (One pound package)		

In addition to data on retail prices, data were compiled on live and wholesale prices for pork, beef and lamb, respectively. The objective was to compare the trend of these prices in order to determine the relationship which existed between these variables. To partially accomplish this, a limited amount of statistical analysis by means of simple correlation was performed.

For analysis, the data were condensed into two categories:

1. The 23 chain stores were grouped into their respective chain affiliations. To avoid the use of names, the four chains were referred to as Chains A, B, C and D with seven, nine, two and five stores respectively in the sample.

1/ The original data also included prices of the various retail meat cuts from September to December, 1954, and from January to March, 1956, but after analysis of these data and due to similarity of results, they were eliminated from the content of this report.

2/ The selected beef cuts were stamped as U. S. Choice Grade.

2. The six stores (including one store of a small chain and five independent stores) were grouped into one category.

Also included is a brief study on the stores' meat advertising practices. This attempted to answer such questions as: (1) Are certain meat items used frequently as loss leaders? (2) Does the use of loss leaders follow in a pattern after a wholesale price reduction? (3) Do all stores tend to use the same meat items as loss leaders in the same week? (4) Are loss leaders repeated for more than a week at a time, and if so, for what cuts?

Pork Pricing

A large portion of the results were obtained from the analysis of tables and charts computed by week. For simplification in the publication, the data were summarized by months.

The monthly average retail price for center loin pork chops ranged from $.69 (December) to $.98 (June) per pound, with $.84 per pound the average for the year (Table 16). Taking all store groups, except Chain B, as a whole, on the average, center rib pork chops[1] retailed $.07 per pound less than center loin pork chops.

In Chain B, the retail price for Center loin pork chops averaged less than $.03 per pound higher than center rib pork chops. This chain displayed pork chops differently from other chains. Only by careful examination of the pre-wrapped package was the customer able to distinguish between the two cuts which were displayed together in the same section of the self-service meat cases and labeled as center cut pork chops.

Considerable differences existed in the prices of these two cuts by store groups. The average monthly price range for center loin pork chops was $.15 per pound and for center rib pork chops, $.13 per pound.

Chain C with the exception of two months retailed center rib pork chops $.08 per pound lower than the other chains. In contrast, independents retailed this cut $.04 per pound higher than the average for all chains.

1/ Tables and charts pertaining to center rib pork chops are not included here, but may be found on file in the livestock marketing Department, Agricultural Economics and Rural Sociology, Ohio State University.

TABLE 15

Monthly Average Retail Prices of 29 Stores in Columbus, Ohio, by Retail and Wholesale Pork Cuts, 1955.

(Price in dollars per pound)

Meat Cut	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Center Cut Loin Pork Chops	$.80	$.80	$.79	$.83	$.88	$.98	$.94	$.87	$.88	$.81	$.75	$.69
Center Cut Rib Pork Chops	.73	.72	.71	.76	.81	.92	.87	.80	.82	.75	.69	.62
Loin End Pork Roasts	---	.46	.49	.51	.55	.65	.58	.50	.54	.48	.44	.40
Rib End Pork Roasts	---	.38	.37	.40	.45	.52	.47	.41	.44	.38	.33	.30
Wholesale Price 10-12# Pork Loins (Chicago)	.41	.41	.39	.44	.50	.57	.47	.43	.45	.39	.36	.32

Source: Original Data and Market News, United States Department of Agriculture, Agricultural Marketing Service, Livestock Division.

TABLE 16

Monthly Average Retail Prices of Center Cut Loin Pork Chops in 29 Columbus, Ohio, Stores, 1955.

(Price in dollars per pound)

Store Groups	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Chain A	$.85	$.87	$.86	$.85	$.93	$1.00	$.92	$.86	$.89	$.79	$.78	$.74
Chain B	.76	.76	.73	.84	.89	1.08	.98	.85	.88	.79	.68	.65
Chain C	.68	.69	.68	.71	.77	.86	.88	.82	.82	.76	.72	.58
Chain D	.83	.83	.81	.88	.88	1.00	.98	.90	.91	.84	.79	.73
Independents	.86	.86	.85	.89	.93	.98	.96	.94	.92	.88	.79	.75
Range of Means	.68-.86	.69-.87	.68-.86	.71-.89	.77-.93	.86-1.08	.88-.98	.82-.94	.82-.92	.76-.88	.68-.79	.58-.75
Average for all Stores	.80	.80	.79	.83	.88	.98	.94	.87	.88	.81	.75	.69

Source: Original data.

Different meat cutting standards employed would account for part of the wide range in price of center loin pork chops between store groups. For example, one store group may cut several more so-called center pork chops out of a pork loin than would another group. This would enable the former to retail the cut at a lower price and still maintain the same gross profit margin because, in effect, part of the end chops would be retailed as center cuts. Also, varying specifications of the meat managers as to the amount of trim allowed has an important bearing upon the weight of chops of each type obtained from a given loin.

A comparison between live hog prices (200-220 pounds, Chicago, Table 17) and the wholesale price of 10-12 pound pork loins, Chicago, indicated that generally the highs and lows occurred in June and December respectively. This was to be expected since hog slaughter is lowest in the summer months and highest in the fall and winter months.

The average retail price per pound for center loin pork chops was nearly twice the price of wholesale 10-12 pound pork loins (Table 18). Center rib pork chops prices averaged 81 percent above wholesale prices.

Generally, retail pork prices followed reasonably well the wholesale pork prices changes. However, the data suggested that the people in charge of pricing meat in the stores recognized the presence of an upper limit on the retail price that can be charged for pork chops regardless of the price of wholesale pork loins. This was especially evident during June when both the retail price of center loin and rib pork chops and the wholesale price of pork loins were the highest for the year. However, the retail price did not rise proportionately with the wholesale price. For the rise to have been proportional, the retail price for center loin and rib pork chops instead of being $.98 and $.92 per pound respectively would have had to have been $1.15 and $1.04 per pound. Thus, the stores were willing to relinquish part of their profit in order to maintain volume.

The Chicago wholesale price of 10-12 pound pork loins averaged about two and one-half times the live hog prices, also at Chicago (Table 19). The average dressing percentage of a hog is approximately 70 percent of the live weight of which loins total about 14 percent. With live hogs at $.17 per pound and assuming hogs will dress 70 percent, then a 200 pound live hog would yield 140 pounds of carcass in which the packer has invested $34.00 (200 x $.17). The 140 pounds then cost the packer approximately $.24 per pound. On this basis, the wholesale price of loins is only about 60 percent above the live hog cost.

TABLE 17

Monthly Average Prices For Live Hogs and 10-12# Wholesale Pork Loins, Chicago, and Retail Center Cut Loin Pork Chops, Retail Center Cut Rib Pork Chops, Loin End Pork Roasts and Rib End Pork Roasts from 29 Stores in Columbus, Ohio, 1955

(Price in dollars per pound)

Meat Cuts	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Live Hog 200-220#	$.19	$.18	$.17	$.18	$.19	$.21	$.19	$.17	$.17	$.15	$.13	$.12
Wholesale Pork Loin 10-12#	.41	.41	.39	.44	.50	.57	.47	.43	.45	.39	.36	.32
Retail Center Cut Loin Pork Chops	.80	.80	.79	.83	.88	.98	.94	.87	.88	.81	.75	.69
Retail Center Cut Rib Pork Chops	.73	.72	.71	.76	.81	.92	.87	.80	.82	.75	.69	.62
Retail Loin End Pork Roasts	None[1]	.46	.49	.51	.55	.65	.58	.50	.54	.48	.44	.40
Retail Rib End Pork Roasts	None[1]	.38	.37	.40	.45	.52	.47	.41	.44	.38	.33	.30

Source: Original Data and Market News, United States Department of Agriculture, Agricultural Marketing Service, Livestock Division.

1/ Prices were not obtained on retail loin and rib end pork roasts during the Month of January, 1955.

TABLE 18

The Percent that the Retail Price of Center Cut Loin Pork Chops in 29 Columbus, Ohio, Stores was above the Chicago Wholesale Price of 10-12 Pound Pork Loins, 1955.

(Price in dollars per pound)

Month	Retail Price	Whole-sale Price	Retail Price Mark-up	Percent Retail Price Above Wholesale Price
January	$.80	$.41	$.39	95
February	.80	.41	.39	95
March	.79	.39	.40	103
April	.83	.44	.39	89
May	.88	.50	.38	76
June	.98	.57	.41	72
July	.94	.47	.47	100
August	.87	.43	.44	102
September	.88	.45	.43	96
October	.81	.39	.42	108
November	.75	.36	.39	108
December	.69	.32	.37	116
Average	.84	.43	.41	97
Range	.69-.98	.32-.57	.37-.47	72 -116

Source: Original Data and Market News, United States Department of Agriculture, Agricultural Marketing Service, Livestock Division.

Table 20 shows that all stores within each chain did not always retail center loin pork chops at the same price. Individual stores in Chain B had a difference in price by as much as $.36 per pound within the same period. Stores within the other groups were more consistent in pricing with the largest difference $.20 per pound.

Apparently store location is not a major factor in setting prices. The stores that serviced the lower income groups retailed meat of identical "grade" at a price at least as high as those stores patronized by people in the medium and high income groups. (The income class intervals used are found on page 55).

TABLE 19

Percent that the Wholesale Price of 10-12 Pound Pork Loins was above the Live Hog Price, 1955, Chicago, Illinois.

(Price in dollars per pound)

Month	Wholesale Price of 10-12 lb. Pork Loins	Live Hog Price (200-220#)	Difference Between Wholesale & Live Price	% Wholesale Price above Live Hog Price
January	$.41	$.19	$.22	116
February	.41	.18	.23	128
March	.39	.17	.22	129
April	.44	.18	.26	144
May	.50	.19	.31	163
June	.57	.21	.36	171
July	.47	.19	.28	147
August	.43	.17	.26	153
September	.45	.17	.29	171
October	.39	.15	.24	160
November	.36	.13	.22	169
December	.32	.12	.19	158
Average	.43	.17	.26	151
Range	.32-.57	.12-.21	.19-.36	116 -171

Source: Original Data and Market News, United States Department of Agriculture, Agricultural Marketing Service, Livestock Division.

TABLE 20

Range of 29 Individual Retail Store Prices in Columbus, Ohio, for Center Loin Pork Chops by Store Groups, by Months, 1955.

(Price in dollars per pound)

Store Groups	Jan.	Feb.	Mar.	Apr.	May	June
Chain A	.83- .89	.85-.89	.85- .89	.69-.89	.79-.99	.99-1.09
Chain B	.59- .89	.59-.89	.59- .89	.69-.89	.79-.99	-- 1.05
Chain C	.65- .71	.67-.71	.67- .71	-- .71	.73-.79	.79- .93
Chain D	.83- .85	.79-.83	.75- .83	.69-.89	.85-.89	.89-1.05
Independents	.79- .99	.79-.99	.79- .89	.69-.95	.89-.95	.94-1.05
Total Range	.59- .99	.59-.99	.59- .89	.69-.95	.73-.99	.79-1.09
65% Range[1]	.75- .85	.74-.86	.72- .86	.80-.86	.80-.96	.94-1.02

TABLE 20 (Continued)

Store Groups	July	Aug.	Sept.	Oct.	Nov.	Dec.
Chain A	.69- .99	.79-.95	.69- .99	.69-.83	.69-.79	.69- .75
Chain B	.79-1.15	.69-.99	.69-1.05	.69-.89	.63-.73	.59- .75
Chain C	.83- .93	.81-.83	.75- .95	.75-.77	.69-.73	.57- .59
Chain D	.89-1.05	.89-.93	.79- .95	.79-.89	-- .79	.63- .79
Independents	.89- .99	.89-.98	.79-1.05	.69-.99	.63-.99	.59- .89
Total Range	.69-1.15	.69-.99	.69-1.05	.69-.99	.63-.99	.57- .89
65% Range[1]	.88-1.00	.83-.91	.83- .93	.76-.86	.70-.80	.63- .75

1/ This is the range which included 65% of all retail store prices
Source: Original Data.

One reason that the prices of center cut loin pork chops varied widely among stores within the same chain may be due to the varied widely among stores within the same chain may be due to the variation in gross margin (or mark-up) between different meat cuts. Stores that have a high gross margin on center cut loin pork chops may retail the lower priced cuts at little or no margin.

The monthly average retail price for Loin End Roasts was $.51 per pound with a range in price from $.40 to $.65 (Table 21). Rib End Roasts[1] on the average retailed $.10 per pound less than the loin end and had a range in price of $.30 to $.52 per pound.

Stores evidently made their profit on pork roasts on the loin end cut. Chart B showed that the monthly average price in all stores for rib end pork roasts was $.03 per pound below the monthly average wholesale price for 10-12 pound pork loins. On the other hand, loin end pork roasts averaged $.08 per pound above the wholesale price. Undoubtably most of the stores were using the rib end roast as a "loss leader." This type of merchandising "killed two birds with one stone," disposed of a "slow mover" such as rib end pork roasts and increased sales of the higher cuts from which most of their meat marketing profits came.

An attempt was made to estimate the composite price mark-up of the retail cuts from a 10-12 pound pork loin (Table 22). In order to accomplish this the following assumptions were made: by excluding waste the following retail cuts comprised a whole pork loin.

(a) Center loin pork chops -- 22 percent
(b) Center rib pork chops -- 22 percent
(c) Loin end pork roasts -- 28 percent
(d) Rib end pork roasts -- 28 percent

Based on these assumptions the price mark-up over the wholesale price ranged from $.15 to $.22 per pound. The average price mark-up was $.18 per pound. In terms of percentages the composite retail price mark-up ranged from 30 to 53 percent (averaged 43 percent) above the wholesale price.

1/ Tables and charts pertaining to rib end pork roasts are not included here, but may be found on file in the Livestock Marketing Department, Agricultural Economics and Rural Sociology Department. The Ohio State University.

TABLE 21

Monthly Average Retail Price of Loin End Pork Roasts in 29 Columbus, Ohio, Stores, 1955.

(Price in dollars per pound)

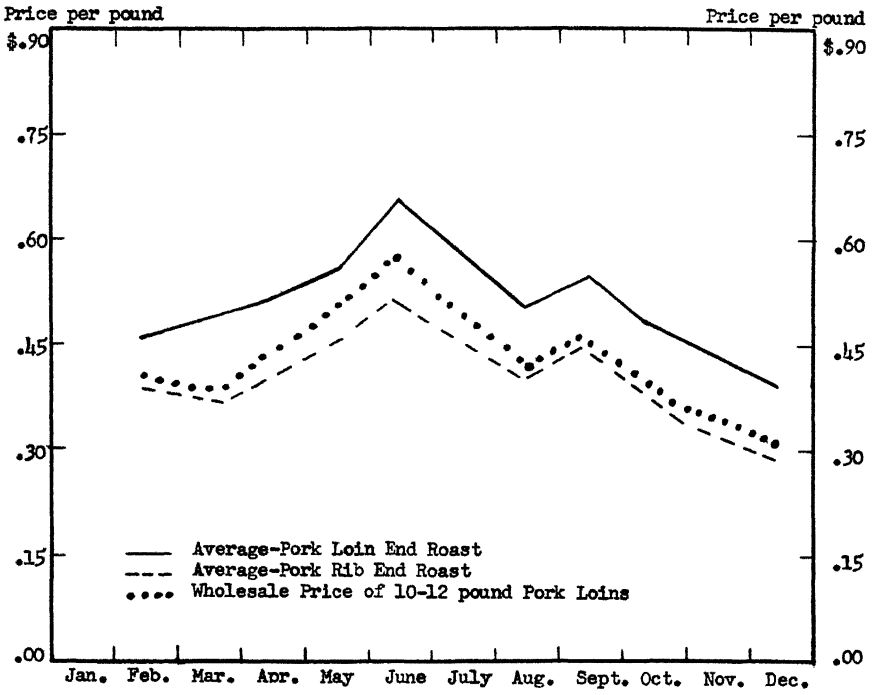
Store Group	Jan.[1/]	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Chain A		$.50	$.51	$.50	$.52	$.69	$.55	$.51	$.53	$.47	$.48	$.43
Chain B		.45	.47	.51	.58	.66	.60	.49	.53	.48	.43	.37
Chain C		.39	.47	.47	.52	.65	.59	.49	.54	.51	.40	.38
Chain D		.48	.48	.53	.55	.61	.57	.53	.54	.44	.41	.40
Independents		.50	.50	.54	.58	.64	.59	.48	.58	.51	.46	.44
Range of Means		.39-.50	.47-.51	.47-.54	.52-.58	.61-.69	.55-.60	.48-.53	.53-.58	.44-.51	.40-.48	.37-.44
Average for all Stores		$.46	$.49	$.51	$.55	$.65	$.58	$.50	$.54	$.48	$.44	$.40

1/ Prices were not obtained for loin end pork roasts during the month of January, 1955.

Source: Original Data.

CHART B

Average Prices of Pork Loin End and Rib End Roasts in 29 Stores Located in Columbus, Ohio and the Average Wholesale Price of 10-12 Pound Pork Loins, Chicago, Illinois, By Months 1955. 1/



1/ Prices were not obtained during the month of January for these pork cuts.

Source: Original Data.

TABLE 22

Percent Retail Price Mark-up of the Composite Retail Price of Pork Loins [1/] in 29 Columbus, Ohio, Stores Over the Wholesale Price of 10-12 Pound Pork Loins, Chicago, 1955.
(Price in dollars per pound)

Month	Wholesale Price 10-12 Pound Pork Loin	Center Loin Chops	Center Rib Chops	Loin End Roasts	Rib End Roasts	Composite Retail Price	Retail Price Mark-up	Percent Retail Above Wholesale
January [2/]								
February	$.41	$.18	$.16	$.13	$.11	$.57	$.16	39
March	.39	.17	.16	.14	.10	.57	.18	46
April	.44	.18	.17	.14	.11	.60	.17	39
May	.50	.19	.18	.15	.13	.65	.15	30
June	.57	.22	.20	.18	.15	.75	.17	30
July	.47	.21	.19	.16	.13	.69	.22	47
August	.43	.19	.18	.14	.11	.62	.19	44
September	.45	.19	.18	.15	.12	.65	.20	44
October	.39	.18	.17	.13	.11	.58	.20	51
November	.36	.17	.15	.12	.09	.53	.18	50
December	.32	.15	.14	.11	.08	.48	.17	53

1/ Excluding waste, the following retail cuts comprise a wholesale pork loin; Center Cut Pork Chops, 22 percent; Center Cut Rib Chops, 22 percent; Loin End Roasts, 28 percent; and Rib End Roasts, 28 percent.

2/ Prices were not obtained.

Source: Original Data and Market News, United States Department of Agriculture, Agricultural Marketing Service, Livestock Division.

The retail price mark-up for uncooked whole hams was small compared to most of the retail pork cuts. The average difference between the retail and wholesale price was $.08 per pound with a narrow range from $.04 to $.13 per pound (Table 23). On a percentage basis the retail price for uncooked whole hams averaged 16 percent above the wholesale price of 12-16 pound whole hams at Chicago.

Whole hams attract only a small percentage of customers, due to the size of the cut itself (12-16 pounds).

TABLE 23

Percent that the Retail Price of 12-16 Pound Uncooked Whole Hams was above the Chicago Wholesale Price of 12-16 Pound Whole Hams in 29 Columbus, Ohio, Stores, by Months, 1955.

(Price in dollars per pound)

Month	Retail Price	Wholesale Price	Retail Price Mark-up	% Retail Price Above Wholesale Price
January	$.63	$.52	$.11	21
February	.62	.49	.13	27
March	.59	.48	.11	23
April	.55	.51	.04	8
May	.56	.51	.05	10
June	.60	.55	.05	9
July	.60	.54	.06	11
August	.64	.55	.09	16
September	.58	.51	.07	14
October	.52	.47	.05	11
November	.53	.46	.07	15
December	.55	.45	.10	22
Average	.58	.50	.08	15
Range	.52-.64	.45-.55	.04-.13	8 -27

Source: Original Data and Market News, United States Department of Agriculture, Agricultural Marketing Service, Livestock Division.

Selling the whole ham was only one method by which the stores merchandised this retail cut. Actually, 34 percent of the time the stores did not display whole hams (Table 24). Instead the stores would cut the whole ham into three retail cuts and display them as center cut ham slices, ham shank end and ham butt end. Stores in Chain B used this practice regularly. Seldom were any whole hams displayed in the stores of this chain, thus accounting in part for the large percentage of the time when no whole hams were found on display.

Prices were recorded on ten (10) different brands of uncooked whole hams. Swift Brand whole hams were sold at the highest price per pound of all brands recorded (average of $.05 per pound higher, Chart C). The retail price on Armour Brand hams averaged $.06 per pound under Swift hams. Also, Armour's prices fluctuated much more than did any of the other brands.

The average mean price of fifteen (15) brands of bacon was $.62 per pound (Table 25). This retail cut sold anywhere from $.19 to $1.14 per pound depending on the brand purchased. The difference in price between brands of bacon was due in part to quality differences and in part to product differentiation. Many people, regardless of price will purchase the more prominent "trade brands" rather than one of the lesser known or "off" brands.

"Rath Diamond" bacon was priced approximately $.26 per pound higher than any other brand. "Swift Premium" bacon averaged $.03 per pound above "Armour Star" and this brand was priced $.02 per pound above the more prominent local brands.

When comparing the average retail price of the fifteen (15) brands of bacon to the Chicago wholesale price (Chart D), it was interesting to note the uniformity between the two prices. Bacon was the only selected retail pork cut in which the retail price mark-up increased substantially with declining wholesale prices. This may be due to the small number of substitutes for bacon and the resulting relatively stable demand for bacon.

Beef Pricing

The next phase of analysis deals with the pricing of retail beef cuts, which includes Round Steak, Sirloin Steak, Club Steak, Cube Steak, T-bone Steak, Rib Roast, and Chuck Roast.

TABLE 24

Comparison of Amount of Choice of Brands of Uncooked Whole Hams Offered on Display by Months in 29 Columbus, Ohio, Stores, in 1955.

(Percent)

Date	Number of Brands of Uncooked Whole Ham on Display								
	None	One	Two	Three	Four	Five	Six	Seven	Total
January	26%	22%	27%	13%	7%	2%	3%	0%	100%
February	41	23	18	13	2	2	1	0	100
March	35	35	16	9	4	1	0	0	100
April	32	19	21	13	9	4	2	0	100
May	30	25	15	0	20	5	5	0	100
June	30	23	25	9	9	2	0	2	100
July	41	19	19	10	6	3	1	1	100
August	43	18	24	7	3	2	0	3	100
September	37	21	25	13	1	1	2	0	100
October	34	28	23	10	2	1	2	0	100
November	34	30	24	2	5	5	0	0	100
December	31	26	23	9	8	2	0	1	100
Average	34%	24%	22%	9%	6%	3%	1%	1%	100%

Source: Original Data.

TABLE 25

Mean and Total Range in Price of Fifteen Brands of Bacon in 29 Columbus, Ohio, Stores, by Months, 1955.

(Price in dollars per pound)

Store Group	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Chain A	$.67	$.62	$.61	$.62	$.59	$.60	$.63	$.61	$.61	$.60	$.54	$.52
Chain B	.71	.65	.63	.64	.60	.66	.67	.64	.65	.67	.57	.52
Chain C	.62	.60	.60	.56	.54	.55	.60	.61	.60	.63	.59	.55
Chain D	.66	.68	.63	.62	.64	.65	.64	.62	.63	.57	.54	.54
Independents	.66	.72	.68	.67	.65	.69	.71	.69	.70	.71	.61	.61
Mean	.66	.65	.63	.62	.60	.63	.65	.63	.64	.64	.57	.55
Total Range	.35-.99	.39-.98	.39-.93	.39-.89	.29-.85	.39-1.14	.39-.94	.19-.89	.39-.92	.35-1.09	.25-.89	.20-.86

Source: Original Data.

TABLE 26

Monthly Average Prices of Selected Retail Beef Cuts in 29 Columbus, Ohio, Stores and the Chicago Wholesale Price of a 600-700 pound Beef Carcass, Choice Grade, 1955.

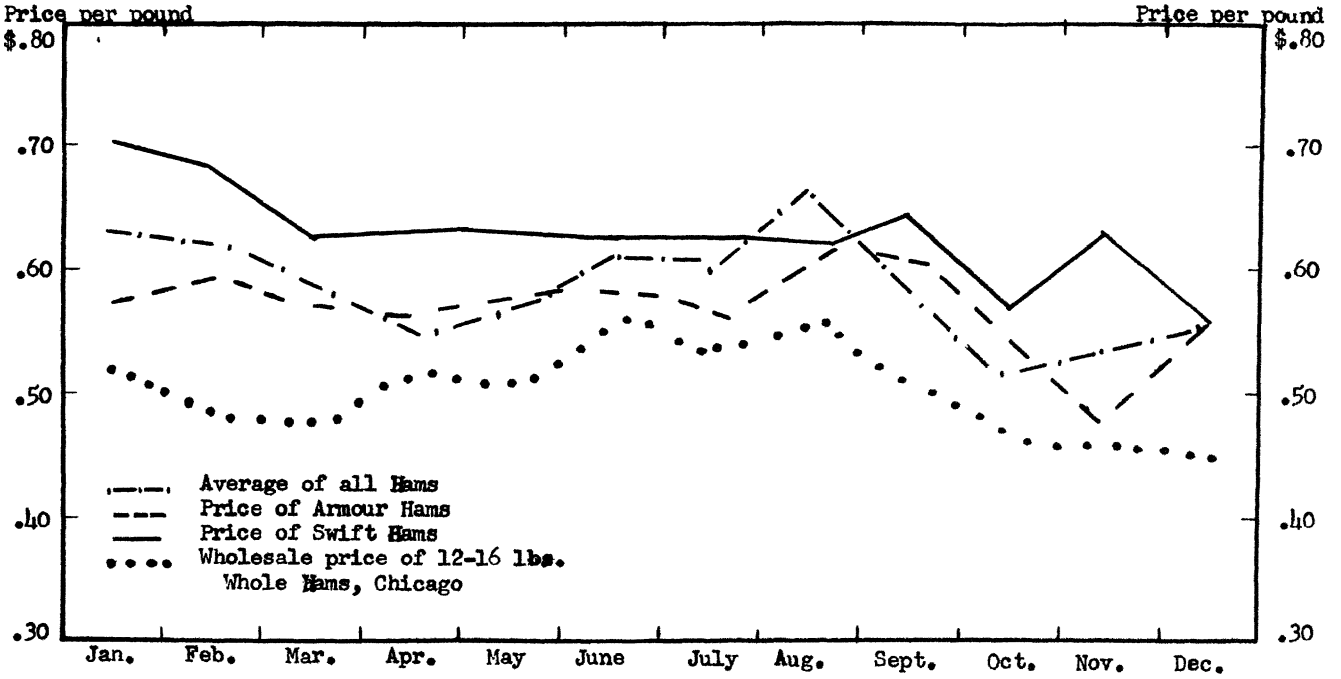
(Price in dollars per pound)

Meat Cut	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Live Cattle	$ .32	$ .32	$ .31	$ .29	$ .26	$ .24	$ .24	$ .23	$ .24	$ .23	$ .23	$ .22
Wholesale Carcass Choice Grade 600-700#	.45	.43	.42	.41	.39	.38	.37	.38	.39	.38	.37	.35
Round Steak	.91	.88	.83	.83	.85	.82	.85	.87	.87	.84	.83	.80
Sirloin Steak	.98	.97	.93	.95	.94	.94	.94	.95	.96	.94	.93	.92
Cube Steak	1.09	1.09	1.00	1.03	1.06	1.02	1.00	1.00	1.03	1.02	1.03	1.02
Club Steak	1.02	1.07	1.04	1.05	1.14	1.05	1.03	1.07	1.01	1.02	1.01	.99
T-Bone Steak	1.20	1.18	1.10	1.15	1.14	1.14	1.17	1.18	1.17	1.17	1.14	1.14
Chuck Roast	.56	.55	.50	.47	.47	.48	.45	.43	.47	.50	.49	.46
Rib Roast	.76	.77	.67	.69	.66	.65	.65	.66	.65	.65	.67	.65

Source: Original Data, and Market Reviews and Statistics, United States Department of Agriculture, Agricultural Marketing Service, Livestock Division.

CHART C

The Price of Armour and Swift Brand 12-16 Pound Hams Compared to the Average Price of Eight Brands of 12-16 Pound Whole Hams in 29 Columbus, Ohio Stores, and the Wholesale Price of 12-16 Pound Whole Hams, Chicago, Illinois, 1955.



Source: Original Data.

Round Steak retailed at the lowest price of all beef steak cuts. The average monthly retail price ranged from $.80 to $.91 per pound with an average price of $.85 per pound (Table 27).

No store group consistently retailed round steak at a price below the others. However the independents' prices on round steak were more nearly in line with the chains' prices, than on most retail pork cuts.

Excluding Chain B, round steak had a narrower range in price than did most of the retail pork cuts. A reasonable assumption for the cause would be that the wholesale and live prices of pork fluctuated considerably more than did those prices for beef.

Chain C retailed round steak differently from the other store groups. This retail cut was split into two parts, the top portion called the "top round" and the bottom portion the "bottom round." The bone was removed from both cuts; "top round" sold for a slightly higher price.

The average retail price mark-up for round steak was more than twice as great as the Chicago wholesale price of a 600-700 pound, choice grade, beef carcass, (Table 28). Round steak comprises only a portion of the whole beef carcass and many less expensive and desirable retail cuts are derived from the carcass as a whole.

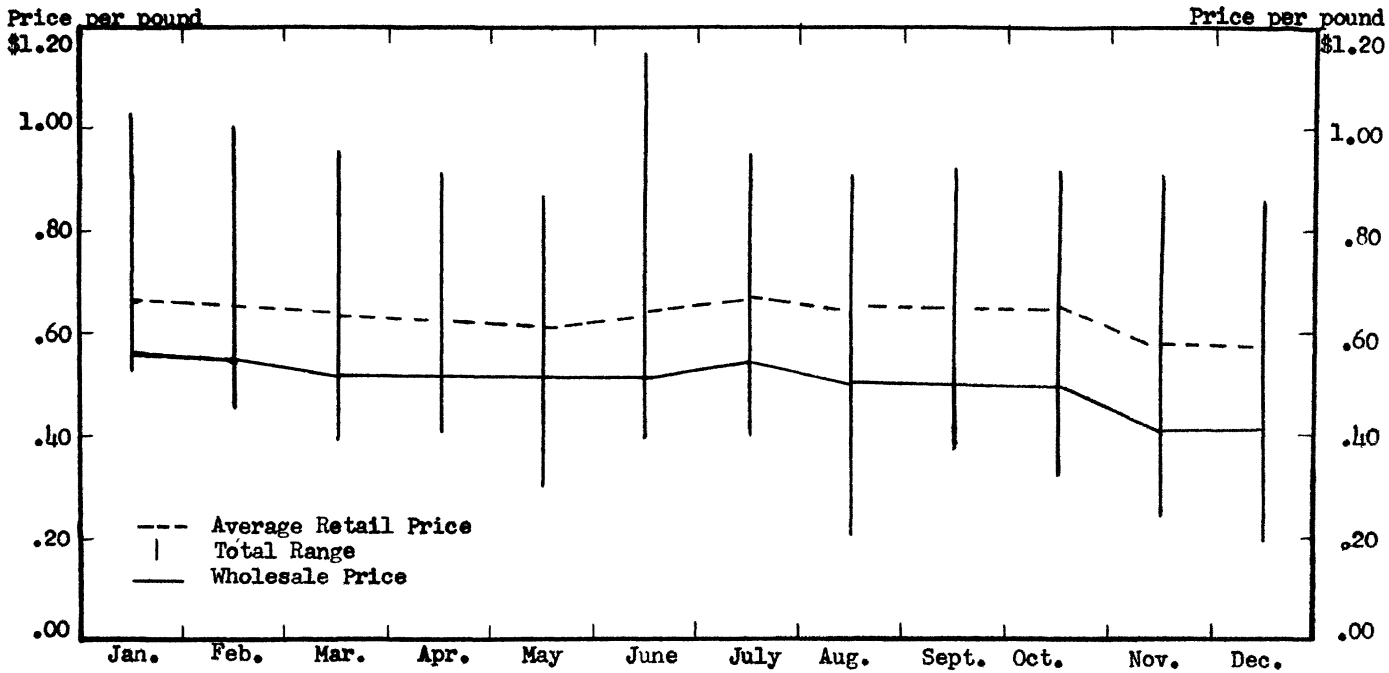
The retail price of sirloin steak[1] differed from round steak mainly in two ways: First, the retail price averaged $.10 per pound higher (.95 as compared to $.85 per pound) and second, the average range in price was only about half as wide ($.06 as compared to $.11 per pound). This is evidence that the more expensive beef cuts, under normal pricing conditions, did not fluctuate in price nearly as much as did the lower priced cuts.

The store groups held to a rather constant retail price mark-up of $.55 per pound, which stated in a percentage, made the retail price nearly 142 percent above the wholesale price.

1/ Tables and charts pertaining to sirloin steak are not included here, but may be found on file in the Livestock Marketing Department, Agricultural Economics and Rural Sociology, Ohio State University.

CHART D

Average and Total Range in Price of Fifteen Brands of Bacon in 29 Columbus, Ohio Stores, and the Chicago Wholesale Price, 1955.



Source: Original Data and Market News, United States Department of Agriculture, Agricultural Marketing Service, Livestock Division.

TABLE 27

Monthly Average Retail Prices of Round Steak in 29 Columbus, Ohio, Stores, by Store Groups, 1955.

(Price in dollars per pound)

Store Groups	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Chain A	$.94	$.97	$.88	$.88	$.87	$.85	$.88	$.90	$.89	$.90	$.89	$.86
Chain B	.90	.85	.72	.72	.79	.80	.80	.84	.87	.79	.80	.74
Chain C	.96	.89	.86	.83	.83	.79	.89	.96	.91	.84	.76	.82
Chain D	.85	.82	.85	.90	.90	.88	.78	.79	.80	.79	.82	.76
Independents	.95	.87	.91	.91	.85	.90	.89	.88	.91	.91	.86	.86
Mean for Chains	.91	.88	.81	.82	.85	.83	.83	.86	.87	.83	.83	.78
Range of Means	.85-.96	.82-.97	.72-.91	.72-.91	.79-.90	.79-.90	.78-.89	.79-.96	.80-.91	.79-.91	.76-.89	.74-.86
Average for all store	$.91	$.88	$.83	$.83	$.85	$.82	$.85	$.87	$.87	$.84	$.83	$.80

Source: Original data.

TABLE 28

Percent that the Retail Price of Round Steak in 29 Columbus, Ohio, Stores was above the Wholesale Price of 600-700 Pound Choice Grade Beef Carcass, Chicago, Illinois, 1955.

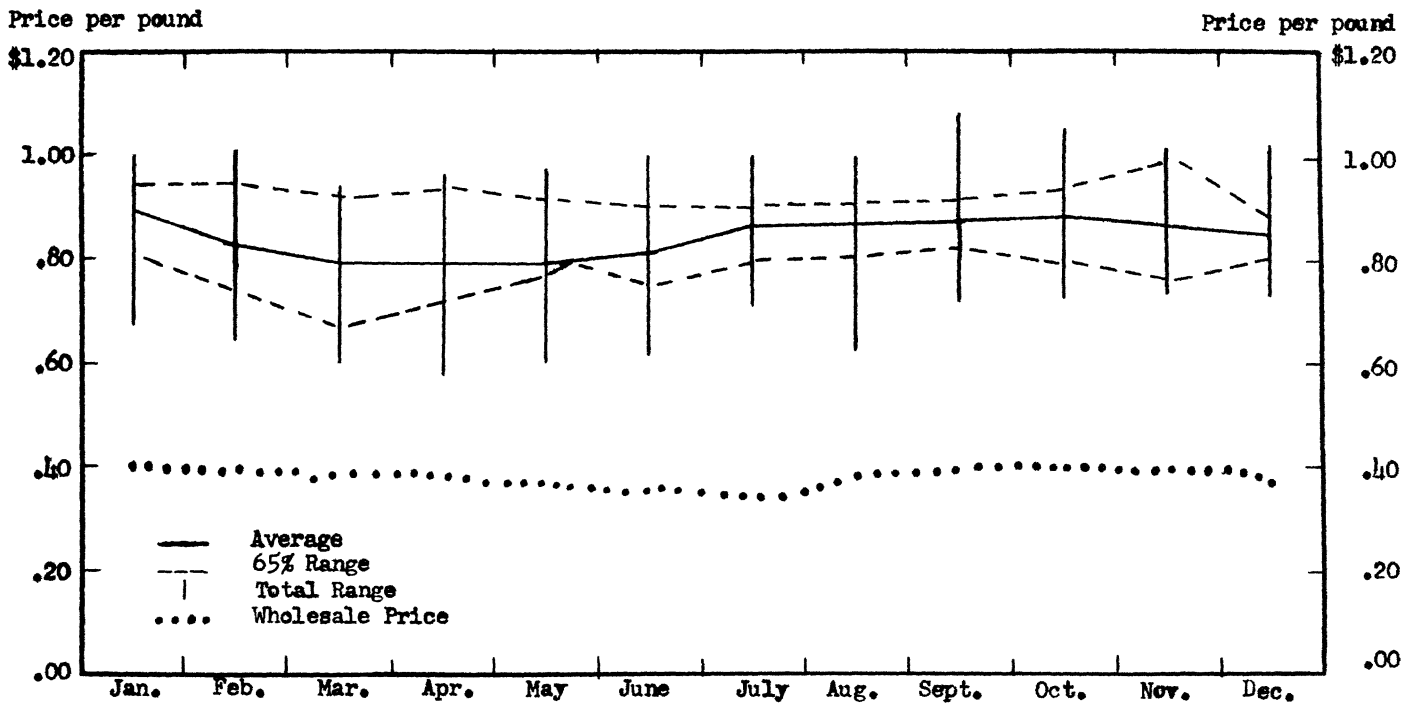
(Price in dollars per pound)

Month	Retail Price	Wholesale Price	Retail Price Mark-up	% Retail Price Above Wholesale Price
January	$.91	$.45	$.46	102
February	.88	.43	.45	105
March	.83	.42	.41	98
April	.83	.41	.42	102
May	.85	.39	.46	118
June	.82	.38	.44	116
July	.85	.37	.48	130
August	.87	.38	.49	129
September	.87	.39	.48	123
October	.84	.38	.46	121
November	.83	.37	.46	124
December	.80	.35	.45	129
Average	.85	.39	.46	116
Range	.80-.91	.35-.45	.41-.49	98 -130

Source: Original data and Market News, United States Department of Agriculture, Agricultural Marketing Service, Livestock Division.

CHART E

Average, 65 Percent Range and Total Range in Price of Round Steak of 29 Stores Located in Columbus, Ohio, 1955.



Source: Original Data

Cube Steak, was one of the most popular of all retail beef, due to its convenience and physical characteristics (such as flavor, tenderness, etc.).[1]

The average monthly retail price for cube steak was $1.03 per pound. Even though the average price range was narrow ($1.00 to $1.09 per pound), some stores thought it desirable to provide "sales" or "specials" on this cut from time to time to keep its popularity high on the consumer's grocery list. This was exemplified by the fact that cube steak had the widest total range in price of all retail meat cuts included (from $.49 to $1.29 per pound).

The reason for the store groups' concern in maintaining a heavy sales volume for this particular cut was obvious. It was one of the highest gross profit items in the meat department. The retail price averaged about $.65 per pound (165 percent) over the wholesale price.

Club Steak[2] retailed at nearly the same price per pound as cube steak. Club steak was distinct from cube steak in that it was not a "good seller" in most store groups. This was especially true for Chain B since during the months of May, July, August, and October, Club Steak was absent in their display cases.

During the first three months of the year the independents retailed club steak at a lower price than did the chains. However, the remainder of the year their price was considerably higher than the chains, by as much as $.22 per pound.

The average retail price mark-up was $.66 per pound, but the range as from $.57 to $.73 per pound. This indicated that the price of club steak was more unstable than the majority of the selected retail meat cuts and that consumer demand determined at what price the stores retailed this cut. Very little relationship existed between the wholesale and retail prices and even at times a reverse relationship prevailed. That is, when the wholesale price went down, the retail price went up.

T-Bone Steak was the highest priced per pound retail beef cut included in the study ($1.15 per pound, Table 29).

1/ Tables and charts pertaining to cube steak are not included here, but may be found on file in the Livestock Marketing Department, Agricultural Economics and Rural Sociology, Ohio State University.

2/ Tables and charts pertaining to Club Steak are not included here, but may be found on file in the Livestock Marketing Department, Agricultural Economics and Rural Sociology, Ohio State University.

TABLE 29

Monthly Average Retail Prices of T-Bone Steak in 29 Columbus, Ohio, Stores, by Store Groups, 1955.

(Price in dollars per pound)

Store Groups	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Chain A	$1.19	$1.19	$1.19	$1.19	$1.22	$1.17	$1.19	$1.19	$1.18	$1.19	$1.18	$1.19
Chain B	1.30	1.30	1.10	1.22	1.21	1.21	1.21	1.24	1.26	1.23	1.21	1.19
Chain C	1.11	....	1.09	1.11	1.11	1.09	1.11	1.16	1.15	1.15	....	.91
Chain D	1.08	1.03	.97	1.02	1.05	1.09	1.10	1.11	1.09	1.09	1.00	1.01
Independents	1.09	1.13	1.05	1.07	1.11	1.12	1.12	1.09	1.11	1.10	1.10	1.08
Mean for Chains	1.19	1.19	1.10	1.16	1.15	1.16	1.17	1.19	1.18	1.18	1.15	1.14
Range of Means	1.08 to 1.30	1.03 to 1.30	.97 to 1.10	1.02 to 1.22	1.05 to 1.22	1.09 to 1.21	1.10 to 1.21	1.09 to 1.24	1.09 to 1.26	1.09 to 1.23	1.00 to 1.21	.91 to 1.19
Average for all stores	$1.20	$1.18	$1.10	$1.15	$1.14	$1.14	$1.17	$1.18	$1.17	$1.17	$1.14	$1.14

Source: Original data.

Chain A retailed T-Bone steak at relatively the same price throughout the year, $1.19 per pound. The other store groups changed prices. The Independents regularly sold T-Bone steak at a lower price than the chains, with the exception of Chain D. Chain D's prices averaged $.10 per pound lower than the other store groups.

This same retail cut had the highest retail price mark-up of all beef cuts analyzed, an average $.76 per pound or nearly 195 percent above the average wholesale price (Table 30).

On the average, rib roast retailed at $.68 per pound.[1] During the first six months of the year no store group had the most favorable prices. One month one group of stores would retail the cut at the lowest price and the next month a different store group had the lowest price, etc. However, in the latter part of the year, Chain A retailed this cut $.05 per pound lower than the average of the other groups.

Independents competed favorably with the chains and in some months retailed rib roast several cents per pound lower than chains.

Rib roast was retailed at prices ranging from $.49 to $1.09 per pound by individual stores within the various store groups. Independents accounted for both extremes of this price range. For chains, the range in price was from $.59 to $.99 per pound. The wide price range was due to some stores' offering rib roast at special prices from time to time throughout the year. This cut commanded one of the smallest price mark-ups of all beef cuts (approximately $.29 per pound.)

Chuck Roast retailed at the lowest price per pound of all selected beef cuts with an average price of $.48 per pound (Table 33.)

Chuck Roast was advertised numerous times by many stores at greatly reduced price.

Table 32 showed the total range for chuck roast was from $.29 to $.89 per pound. Chuck roast had the lowest retail mark-up of all beef cuts (Table 33), on the average $.08 per pound above the wholesale price of a whole beef carcass.

1/ Tables and charts pertaining to beef rib roasts are not included here, but may be found on file in the Livestock Marketing Department, Agricultural Economics and Rural Sociology, Ohio State University.

TABLE 30

The Percent that the Retail Price of T-Bone Steak in 29 Columbus, Ohio, Stores was above the Wholesale Price of 600-700 Pound Choice Grade Beef Carcass, Chicago, Illinois, 1955.

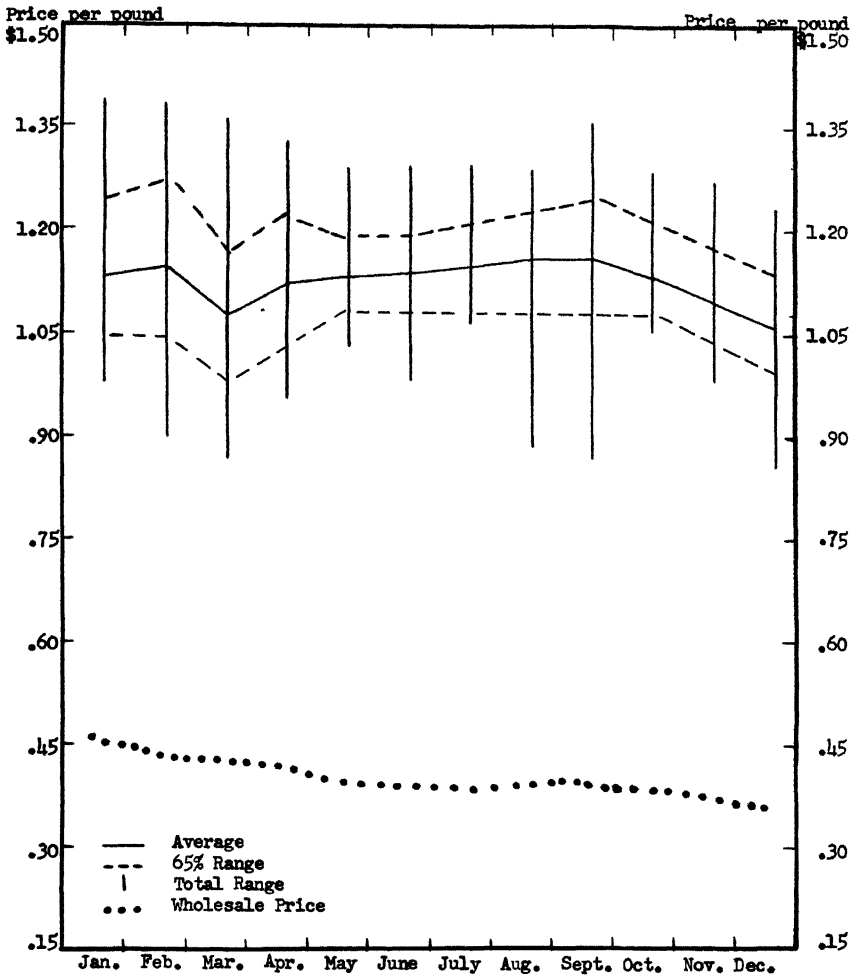
(Price in dollars per pound)

Month	Retail Price	Wholesale Price	Retail Price Mark-up	% Retail Price Above Wholesale Price
January	$1.20	$.45	$.75	167
February	1.18	.43	.75	174
March	1.10	.42	.68	162
April	1.15	.41	.74	180
May	1.14	.39	.75	192
June	1.14	.38	.76	200
July	1.17	.37	.80	216
August	1.18	.38	.80	211
September	1.17	.39	.78	200
October	1.17	.38	.79	208
November	1.14	.37	.77	208
December	1.14	.35	.79	226
Average	1.15	.39	.76	195
Range	1.10-120	.35-.45	.68-.80	162 -226

Source: Original data.

CHART F

Average, 65 Percent Range and Total Range in Price of T-Bone Steak of 29 Stores Located in Columbus, Ohio, 1955.



Source: Original Data

TABLE 31

Monthly Average Retail Prices of Chuck Roast in 29 Columbus, Ohio, Stores, by Store Groups, 1955.

(Price in dollars per pound)

Store Group	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Chain A	$ .61	$ .66	$ .50	$ .44	$ .52	$ .42	$ .43	$ .42	$ .46	$ .53	$ .52	$ .47
Chain B	.56	.51	.52	.48	.52	.55	.46	.47	.48	.50	.49	.47
Chain C	.48	.49	.48	.41	.41	.39	.39	.38	.42	.44	.41	.41
Chain D	.51	.51	.45	.47	.43	.45	.42	.42	.44	.47	.46	.43
Independents	.53	.55	.54	.51	.46	.49	.52	.41	.49	.50	.49	.46
Mean for Chains	.56	.55	.49	.46	.47	.47	.44	.43	.46	.50	.48	.45
Range of Means	.48-.61	.49-.66	.45-.54	.41-.51	.41-.52	.39-.55	.39-.52	.38-.47	.42-.49	.44-.53	.41-.52	.41-.47
Average for all Stores	$ .56	$ .55	$ .50	$ .47	$ .47	$ .48	$ .45	$ .43	$ .47	$ .50	$ .49	$ .46

Source: Original data.

TABLE 32

Range of 29 Columbus, Ohio, Individual Retail Store Prices of Chuck Roast, by Store Groups, by Months, 1955.

(Price in dollars per pound)

Store Groups	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Chain A	$ .49- .65	$ .59- .69	$ .45- .55	$ .39- .49	$ .49- .55	$ .39- .59	$ .39- .49	$ .39- .49	$ .35- .59	$ .53-	$ .49- .53	$ .39- .49
Chain B	.39- .69	.39- .59	.39- .59	.37- .89	.39- .59	.49- .69	.33- .73	.33- .69	.35- .59	.39- .55	.39- .49	.35- .73
Chain C	.43- .49	.43- .55	.43- .61	.39- .45	.39- .49	.39-	.37- .39	.37- .39	.35- .49	.39- .51	.37- .47	.35- .47
Chain D	.43- .57	.45- .57	.39- .49	.39- .49	.39- .49	.39- .49	.39- .49	.37- .45	.37- .49	.37- .49	.39- .49	.39- .49
Independents	.39- .65	.39- .63	.49- .59	.39- .65	.33- .59	.29- .69	.39- .69	.29- .59	.37- .59	.39- .59	.39- .59	.39- .59
Total Range	.39- .69	.39- .69	.39- .61	.37- .89	.33- .59	.29- .69	.33- .69	.29- .69	.35- .59	.37- .59	.37- .59	.35- .73
65% Range 1/	$ .49- .59	$ .46- .66	$ .45- .55	$ .42- .50	$ .41- .53	$ .39- .53	$ .37- .51	$ .36- .48	$ .42- .50	$ .44- .53	$ .44- .50	$ .44- .46

1/ This is the range which included 65% of all retail store prices.

Source: Original data.

TABLE 33

The Percent that the Retail Price of Chuck Roast in 29 Columbus, Ohio, Stores was above the Wholesale Price of 600-700 Pound Choice Grade Beef Carcass, Chicago, Illinois, 1955.

(Price in dollars per pound)

Month	Retail Price	Wholesale Price	Retail Price Mark-up	% Retail Price Above Wholesale Price
January	$.56	$.45	$.11	24
February	.55	.43	.12	28
March	.50	.42	.08	19
April	.47	.41	.06	15
May	.47	.39	.08	21
June	.48	.38	.10	26
July	.45	.37	.08	22
August	.43	.38	.05	13
September	.47	.39	.08	21
October	.50	.38	.12	32
November	.49	.37	.12	32
December	.46	.35	.11	31
Average	.48	.39	.09	24
Range	$.42-.54	$.35-.45	$.05-.12	13 -32

Source: Original Data.

TABLE 34

Percent that the Retail Price of Lamb Loin Chops in 29 Columbus, Ohio, Stores was above the Chicago Wholesale Price of 40-50 Pound Lamb Carcasses, 1955.

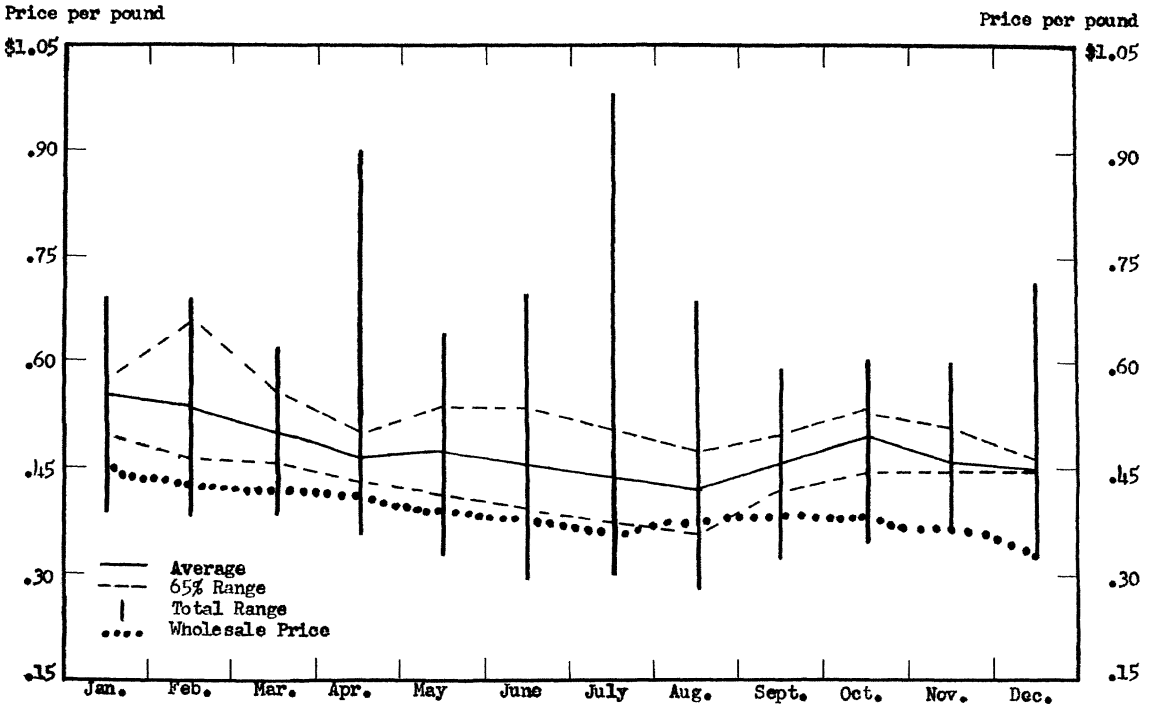
(Price in dollars per pound)

Month	Retail Price	Wholesale Price	Retail Price Mark-up	% Retail Price Above Wholesale Price
January	$1.12	$.43	$.69	160
February	1.12	.42	.70	167
March	1.10	.42	.68	162
April	1.00	.43	.57	133
May	1.01	.41	.60	146
June	1.11	.47	.64	136
July	1.14	.46	.69	150
August	1.10	.43	.67	156
September	1.11	.43	.68	158
October	1.12	.44	.68	155
November	1.12	.40	.72	180
December	1.13	.38	.75	197
Average	1.10	.43	.67	158
Range	1.00-1.14	.38-.47	.57-.75	133 -197

Source: Original data.

CHART G

Average, 65 Percent Range, and Total Range in Price of Chuck Roast in 29 Stores Located in Columbus, Ohio, 1955



Source: Original Data

TABLE 35

Range of 29 Columbus, Ohio, Individual Retail Store Prices of Lamb Loin Chops, by Store Groups, by Month, 1955.

(Price in dollars per pound)

Store Groups	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Chain A	$1.09-1.19	$1.19-....	$1.09-1.19	$.65-1.19	$.89-1.19	$.99-1.19	$1.19-....	$1.19-....	$.99-1.19	$.99-1.19	$1.19-....	$1.19-....
Chain B	.85-1.21	.59-1.19	.89-1.09	.39-1.09	.69-....	.94-1.05	.95-1.09	.89-1.08	.65-.99	.69-1.39	.89-.95	.89-1.17
Chain C	....-....	....-....	1.07-....	1.01-....	.99-....	1.09-....	1.17-....	1.15-....	1.15-....	1.09-1.15	....-....	1.13-....
Chain D	1.19-....	.99-1.19	1.19-1.29	.59-1.19	1.19-....	.99-1.19	.99-1.19	.46-1.19	1.19-....	1.19-....	1.15-1.19	1.19-....
Independents	.88-1.19	1.19-....	.98-1.19	.59-1.19	.98-1.19	.98-1.40	1.19-....	.93-1.19	.99-1.19	.98-1.19	1.19-....	1.19-....
Total Range	.85-1.21	.59-1.19	.89-1.29	.39-1.19	.69-1.19	.94-1.40	.95-1.19	.46-1.19	.65-1.19	.69-1.39	.89-1.19	.89-1.19
65% Range	$1.07-1.17	$1.07-1.17	$1.02-1.18	$.93-1.07	$.92-1.10	$1.04-1.18	$1.06-1.22	$1.00-1.20	$1.02-1.20	$1.06-1.18	$1.11-1.13	$1.07-1.19

1/ This is the range which included 65% of all retail store prices.

Source: Original data.

Lamb Pricing

Retail prices were collected on the following lamb cuts: Loin Chops, Rib Chops, Shoulder Chops, Leg-of-Lamb, Shoulder Roasts, Shanks, Patties, Neck, Breast, and Lamb Stew. Only the pricing of lamb loin chops and leg-of-lamb were analyzed.

Lamb Loin Chops retailed at an average price of $1.10 per pound and had a total price range from $ .39 to $1.40 per pound (Tables 34 and 35). However, the extreme prices were found in few stores and only occurred one or two weeks during the year.

Chain B had the most flexible method of pricing lamb. This chain had the widest price variation among store groups, and the greatest fluctuation in their own individual stores' pricing pattern. Within their individual stores the price of lamb loin chops varied as much as $ .30 per pound from one week to the next.

Another of Chain B's merchandising techniques was for a store one week to have a fairly large supply of lamb loin chops on display at a regular price and the next week have a single package or none at all on display. This situation happened frequently and was not limited to lamb cuts alone.

The lowest average retail prices for lamb loin chops were in April and May. The prices were around $ .10 per pound less during these months. Retail prices of the various other lamb cuts did not fluctuate in this manner.

The retail price mark-up for lamb loin chops was over $ .67 per pound which made the retail price nearly 160 percent above the wholesale price of a 40 to 50 pound choice grade carcass at Chicago. This may be one reason why lamb consumption per capita is low in Columbus, Ohio.

It is true that the stores had as high or higher retail price mark-up on some beef cuts as on lamb loin chops. It seems possible that the stores could increase lamb consumption significantly by lowering the retail mark-up.

Leg-of-lamb was the most popular lamb cut merchandized. If stores had any lamb for sale, this cut was usually found in the display case. This cut was sold at prices from $ .59 to $1.05 per pound with an average price of $ .76.

Chains A and D did little sales promotion on this cut, whereas the other store groups occasionally reduced their prices to increase sales. The prices at individual stores within Chains A and D re-

TABLE 36

Range of 29 Columbus, Ohio, Individual Retail Store Prices of Leg-of-Lamb, by Store Groups, by Months, 1955.

(Price in dollars per pound)

Store Groups	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Chain A	$ .79-....	$ .79-....	$ .73-.99	$ .73-1.05	$ .69-.73	$ .73-.85	$ .79-.89	$ .75-.79	$ .75-.99	$ .75-....	$ .75-....	$ .73-.75
Chain B	.75-.79	.79-....	.72-.79	.59-.99	.82-....	.75-.85	.72-.95	.69-.79	.73-.85	.73-.75	.69-.75	.73-.83
Chain C	.63-.71	.71-....	.59-.65	.65-....	.69-....	.77-.79	.81-....	.75-.81	.69-1.05	.69-....	.69-....	.63-....
Chain D	.69-.79	.69-.79	.73-.79	.73-.79	.69-.73	.69-.79	.69-.79	.73-....	.69-.99	.69-.73	.73-....	.73-....
Independents	.69-.89	.79-.95	.79-.89	.69-.89	.79-.89	.69-.85	.79-.98	.59-.89	.57-1.05	.59-.89	.69-.89	.73-.83
Total Range	.63-.89	.69-.95	.59-.99	.59-1.05	.69-.89	.69-.85	.69-.98	.59-.89	.57-1.05	.59-.89	.69-.89	.63-.83
65% Range 1/	$ .75-.77	$ .75-.79	$ .73-.75	$ .71-.77	$ .71-.81	$ .74-.82	$ .76-.88	$ .74-.80	$ .75-.81	$ .73-.75	$ .70-.76	$ .71-.73

1/ This is the range which included 65% of all retail store prices.

Source: Original data.

TABLE 37

Percent that the Retail Price of Leg-of-Lamb in 29 Columbus, Ohio, Stores was above the Wholesale Price of 40-50 Pound Lamb Carcass, Chicago, 1955

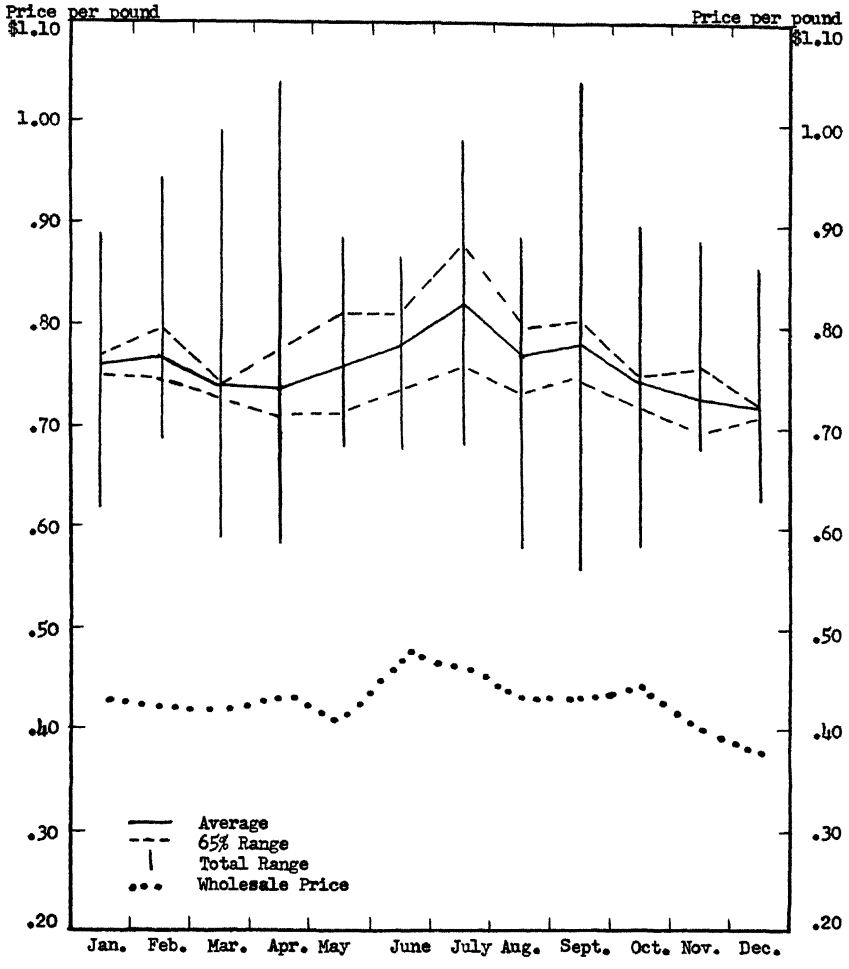
(Price in dollars per pound)

Month	Retail Price	Wholesale Price	Retail Price Mark-up	Percent Retail Above Wholesale Price
January	$ .76	$ .43	$ .33	77
February	.77	.42	.35	83
March	.74	.42	.32	76
April	.74	.43	.31	72
May	.76	.41	.35	85
June	.78	.47	.31	66
July	.82	.46	.36	78
August	.77	.43	.34	79
September	.78	.43	.35	81
October	.74	.44	.30	68
November	.73	.40	.33	83
December	.72	.38	.34	89
Average	.76	.43	.33	78
Range	$ .72- .82	$ .38- .47	$ .30- .36	66-89

Source: Original Data.

CHART H

Average, 65 Percent Range, and Total Range in Price of Leg-of-Lamb in 29 Stores Located in Columbus, Ohio, 1955.



Source: Original Data

mained rather constant throughout the year. However, there was a considerable price difference between the two respective chains. Chain B along with the independents had the greatest price variations for leg-of-lamb.

Little lamb was found regularly displayed for sale by the stores. The general rule seemed to be to have one package of loin chops, one package of leg-of-lamb, and one package of lamb stew. On the average, stores included in this study had from three to seven twelve-foot cases devoted to fresh meat, representing from 36 to 84 feet of space. About one to two feet of this space was used for the display of lamb.

In most stores where lamb was sold, it was not placed in a favorable position in the display case. Often it was displayed along with the variety meats such as kidneys, liver, brains, heart, etc., and not with the fresh red meats.

Lamb consumption and lamb pricing may be improved by having some lamb in the meat display cases at all times. Lamb is priced out of the market by many stores. Packaging of lamb cuts could be improved. Often the grade wasn't marked on the package.

MEAT ADVERTISING PROGRAM OF STORE GROUPS

A brief study of meat advertising by store groups was conducted in an attempt to answer such questions as:

(1) Are certain meat items used frequently as "loss leaders?"
(2) When meat items are advertised, are they always at reduced prices?
(3) Do the store groups tend to advertise the same meat items in the same week?
(4) Are loss leaders repeated for more than a week at a time? If so, for what cuts?

The data for this study were collected from the Thursday edition of a Columbus newspaper for the entire year 1955. Retail grocery stores' "ads" were generally published in this issue.

In analyzing the store groups individually in Table 38, it was found that Chain A did little advertising of pork cuts with the exception of Whole Hams. This cut was advertised in the newspaper on 14 different occasions during the year. In those 14 weeks, it was advertised four times as a "loss-leader" and ten times at a reduced price ranging from $ .02 to $ .19 per pound lower than the average monthly price during the month in which the "ad" appeared.

TABLE 38

Number of Weeks the Store Groups Advertised Retail Meat Cuts in a Columbus, Ohio, Newspaper at Reduced Prices and at Loss Leader Prices 1/ During the Year 1955

Store Group	How Advertised	Center Cut Loin Pork Chops	Center Cut Rib Pork Chops	Loin End Pork Roast	Rib End Pork Roast	Whole Hams (Uncooked)	Round Steak	Sirloin Steak	T-bone Steak	Club Steak	Cube Steak	Beef Rib Roast	Beef Chuck Roast	Lamb Loin Chops	Leg of Lamb
Chain A	At reduced price	-	1	2	2	10	4	6	-	-	14	15	1	-	1
	As loss-leader	2	2	-	-	4	12	6	-	-	--	2	22	-	-
Chain B	At reduced price	1	-	2	2	6	4	1	-	-	4	3	1	2	2
	As loss-leader	3	-	-	-	5	8	-	-	-	-	2	11	-	-
Chain C	At reduced price	1	2	1	-	14	12	2	-	-	1	1	8	-	-
	As loss-leader	-	-	-	-	12	4	-	-	-	-	-	23	-	-
Chain D	At reduced price	-	-	3	5	4	11	9	3	-	5	5	7	1	9
	As loss-leader	-	-	-	1	8	10	1	-	-	-	-	10	-	-
Indepen-dents	At reduced price	-	-	1	3	3	1	1	2	4	2	4	2	3	5
	As loss-leader	1	2	-	1	8	8	4	3	-	3	4	11	-	-
Total	At reduced price	2	3	9	12	37	32	19	5	4	26	28	19	6	17
	As loss-leader	6	4	0	2	37	42	11	3	0	3	8	77	0	0

1/ Considered loss-leader when retail price was at or below the wholesale price or at least $.20 below the average monthly price.

Source: Original Data.

"Loss-leader" prices and "reduced" prices in this study were classified as a "loss-leader" where the advertised price was $ .20 or more per pound lower than the average monthly price, and any reduction under $ .20 per pound was classified as a "reduced" price.

Whole hams were not advertised for more than two weeks in succession and the price was usually the same for both weeks. However, the cut was advertised either at a reduced price or as a loss-leader at least once in every month except July.

Chain A advertised beef cuts much more than either pork or lamb cuts. The primary beef cuts advertised included: Round Steak (16 weeks), Sirloin Steak (12 weeks), Cube Steak (14 weeks), Rib Roast (17 weeks), and Chuck Roast (23 weeks).

Chuck roast and round steak frequently were advertised at loss-leader prices while cube steak and rib roast were usually advertised only at reduced prices. During October and November round steak and chuck roast were advertised each week at loss-leader prices and carried the same price throughout the period.

Chain A advertised the same beef cut for as many as twelve consecutive weeks (chuck roast).

Chain B used nearly the same advertising schedule as Chain A. With the exception of whole hams, pork cuts were advertised sparingly. Advertisement of whole hams took place eleven (11) times at prices about equally divided in number between reduced and loss-leader prices. Chain B never advertised the same pork cut for more than two weeks in a row and usually then at different prices.

Chain B's meat advertising program featured beef cuts. Round steak and chuck roast were the principal cuts advertised and were frequently at loss-leader prices.

Chain B advertising quoted prices that applied only to certain stores. It was also observed that the stores who did abide by the advertised prices were sold out of those particular cuts about midday Friday. This incident happened too frequently throughout the year to assume that poor judgment on the part of the meat managers was the reason.

Chuck roast was the only beef cut advertised for more than two weeks in succession. During the last three weeks of March this cut was advertised regularly by Chain B at no change in price.

The most persistent advertising of Whole Hams was done by Chain C. The cut was advertised by this chain in half of the total 52 newspaper editions (14 at reduced prices and 12 times at loss-leader prices). The remaining retail pork cuts were found in the newspaper a negligible number of times.

Chain C advertised round steak in 16 issues (12 at reduced prices and 4 times at loss-leader prices) and chuck roast in 31 issues, 23 times at loss-leader prices.

The meat advertising program of the independents was nearly as voluminous as those of the chains. Pork took the back seat in advertising as compared to beef among the Independents. Whole hams, which were advertised 11 times, largely constituted the extent of advertising done by the Independents on pork.

Round steak, rib roast and chuck roast were nearly of equal importance in the number of times advertised. Chuck roast and round steak were usually found to be at loss-leader prices while rib roast was equally advertised at reduced and loss-leader prices.

T-bone steak was advertised more often by Independents than by any of the chains and Independents were the only ones that priced this cut at loss-leader prices.

With the exception of Chain D, lamb cuts were most frequently advertised by the Independents. The major lamb cuts advertised were leg-of-lamb and lamb loin chops.

One comes to these conclusions on the basis of this study of meat advertising: (1) The retail cuts consisting of whole hams, round steak and chuck roast were frequently used as loss-leaders by all store groups and were repeated for as many as 18 consecutive weeks. (2) When meat items were advertised, they were either at reduced or loss-leader prices, rarely at regular prices.

Correlation Analysis between the Wholesale and Retail Prices of Pork, Beef and Lamb 1/

Significant positive correlation was present between the wholesale and retail prices in all pork cuts with the exception of uncooked whole hams. Rib roast and chuck roast were the only beef cuts that showed any degree of relationship between the two prices. The least relationship was exhibited by all retail lamb cuts.

1/ Explanation of procedure used will be found in Appendix page 93.

For nearly all meat cuts within the various species the greatest positive correlation was found when the retail prices lagged the wholesale prices by one week.

For illustrative purposes, center cut loin pork chops resulted in a value for r with no lag in prices of .87209 [1/] and with a one week lag in the retail price of .91062. The square of .87209 and .91062 resulted in a coefficient of determination of .7605 and .8292 respectively. Taking the highest of the two values, this meant that 82.92 percent of the factors common to one variable were also common to the other variable, assuming all other things are equal. Speaking in actual terms, this would, in all likelihood, mean that 82.92 percent of the factors common to both variables could be found in price per unit (pound), and that the remaining 17.08 percent of the factors that were influential in leading to the results obtained was not explained.

The retail meat cut that showed the highest relationship between the wholesale and retail price was center cut rib pork chops with a value for r of .96455 and for r^2 of .9305, followed closely by rib end pork roast, loin end pork roast, bacon and center cut loin pork chops in that order.

A point of interest concerning the analysis of one pound bacon packages showed little correlation between the two variables with no lag in price. However, under the other condition, lagging the retail price by one week from the wholesale price, a high degree of relationship (r of .93026 and r^2 of .8654) existed between the two prices. This tends to indicate that the meat buyers of these stores purchased their bacon supply at least one week in advance.

It is evident from Table 39 that stores were using other means than the wholesale price for setting prices on retail beef and lamb cuts. This table clearly showed that little significant relationship existed between the two variables under either of the two conditions for beef and lamb cuts.

It was observed from the advertising program of the stores that whole hams and chuck roasts were predominately used by most stores as "loss-leaders". This is undoubtedly one reason for the low correlation found in these two cuts.

It is difficult to explain why the relationship between the wholesale and retail prices was significant in pork and nonsignificant in

1/ For readers not familiar with correlation analysis, 1.00 is perfect correlation. Therefore, 0.8 and 0.9 show lesser degrees of correlation, and values less than 0.5 show very little correlation.

TABLE 39

Measures of Relationship Between Chicago Wholesale Prices and Columbus, Ohio, Retail Prices For Pork, Beef, and Lamb Cuts, 29 Columbus, Ohio, Retail Stores, 1955

Retail Meat Cut	Coefficient of Correlation of		Coefficient of Determination		Estimating Equation		Standard Error of Estimates	
	No lag in Prices	One week Lag in retail price	No lag in Prices	One week Lag in retail price	No lag in Prices	One week Lag in retail price	No lag in Prices	One week Lag in retail price
PORK	(r)	(r)	(r^2)	(r^2)	(a) (b)	(a) (b)	(Sy)	(Sy)
Center Cut Loin Pork Chops	.872	.911	.761	.829	.359+1.119x	.324+1.198x	.044	.036
Center Cut Rib Pork Chops	.873	.965	.763	.931	.328+1.032x	.333+1.018x	.039	.019
Loin End Pork Roasts	.925	.935	.855	.874	.102+ .949x	.084+ .987x	.027	.026
Rib End Pork Roasts	.909	.938	.826	.880	.034+ .864x	.009+ .918x	.028	.023
Uncooked Whole Hams	.585	.493	.342	.243	.229+ .695x	.274+ .602x	.035	.036
1# Sliced Bacon Packages	.517	.930	.267	.865	.283+ .680x	.256+ .728x	.051	.014
BEEF								
T-Bone Steak	.165	.220	.027	.048	1.084+ .182x	1.059+ .244x	.030	.029
Cube Steak	.436	.468	.190	.219	.782+ .632x	.762+ .677x	.036	.035
Club Steak	.128	.244	.017	.060	.940+ .258x	.824+ .552x	.054	.051
Sirloin Steak	.290	.374	.084	.140	.833+ .289x	.804+ .358x	.030	.025
Round Steak	.200	.360	.040	.130	.612+ .599x	.588+ .659x	.047	.046
Rib Roast	.677	.735	.458	.540	.200+1.208x	.158+1.308x	.036	.033
Chuck Roast	.528	.613	.279	.376	.068+1.056x	.011+1.233x	.046	.043
LAMB								
Lamb Loin Chops	.020	.108	.000	.001	.113+-.057x	1.230+-.311x	.077	.078
Lamb Rib Chops	.132	.078	.071	.006	.874+ .152x	.853+ .204x	.031	.031
Leg-of-Lamb	.150	.038	.022	.002	.689+ .204x	.749+ .053x	.037	.037
Lamb Shoulder Chops	.040	.072	.002	.005	.687+-.066x	.709+-.121x	.045	.046
Lamb Shoulder Roast	.140	.073	.020	.005	.481+ .195x	.517+ .104x	.038	.038
Lamb Shank	.279	.276	.078	.076	.084+ .633x	.089+ .617x	.064	.064
Lamb Neck	.233	.269	.054	.072	.035+ .709x	.003+ .779x	.091	.089
Lamb Patty	.239	.288	.057	.083	.138+ .806x	.056+1.013x	.088	.088
Lamb Breast	.239	.212	.057	.045	.091+ .286x	.101+ .259x	.033	.033
Lamb Stew	.039	.030	.002	.001	.213+ .092x	.275+-.070x	.066	.064

Source: Original Data

beef and lamb. One explanation might be that pork prices fluctuate more at the retail level than do beef and lamb prices. This seems reasonable since wholesale prices of hogs at livestock markets generally have two seasonal peaks while beef and lamb have only one.

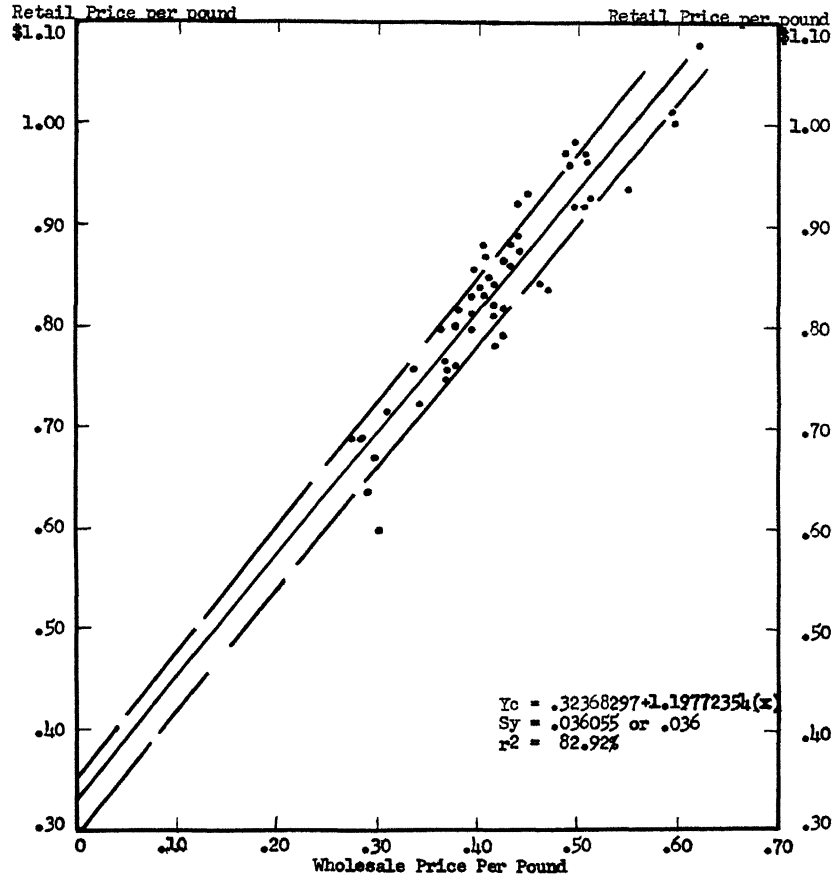
Another possible explanation for the low relationship found between the two variables in beef and lamb cuts might be that the operators of the meat departments feel that over a period of time, the change in price of one variable will automatically offset the change in price of the other variable.

Gross margin varied in different retail meat cuts. Meat departments retail the lower priced cuts at little or no margin. Regardless of the wholesale price, a specific gross margin is desired for the meat department as a whole. This gross margin is obtained by changing the prices of the various retail meat cuts. Due to the high fixed costs of a meat department, it is necessary to have a gross margin that doesn't vary violently over a period of time in order to carry on a successful operation.

Meat cutting and trimming practices are different among the store groups and have an effect upon the retail prices. This undoubtedly is one of many reasons for differences in prices between stores for the same meat item of the same grade.

CHART I

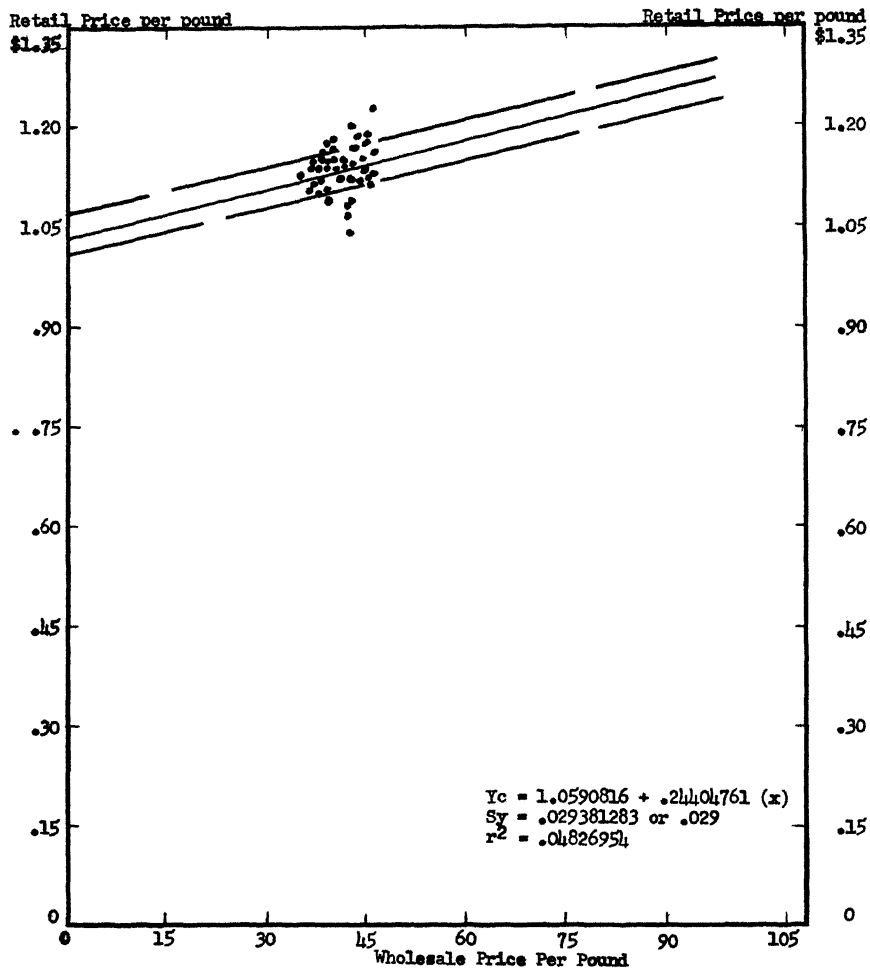
Correlation Between the Chicago Wholesale Price and Columbus Retail Price of Center Cut Loin Pork Chops, 29 Columbus, Ohio Stores 1955.



Source: Original Data

CHART J

Correlation Between the Chicago Wholesale Price and Columbus Retail Price of T-Bone Steak for one week lag in the Retail Price of 29 Columbus, Ohio Stores 1955.

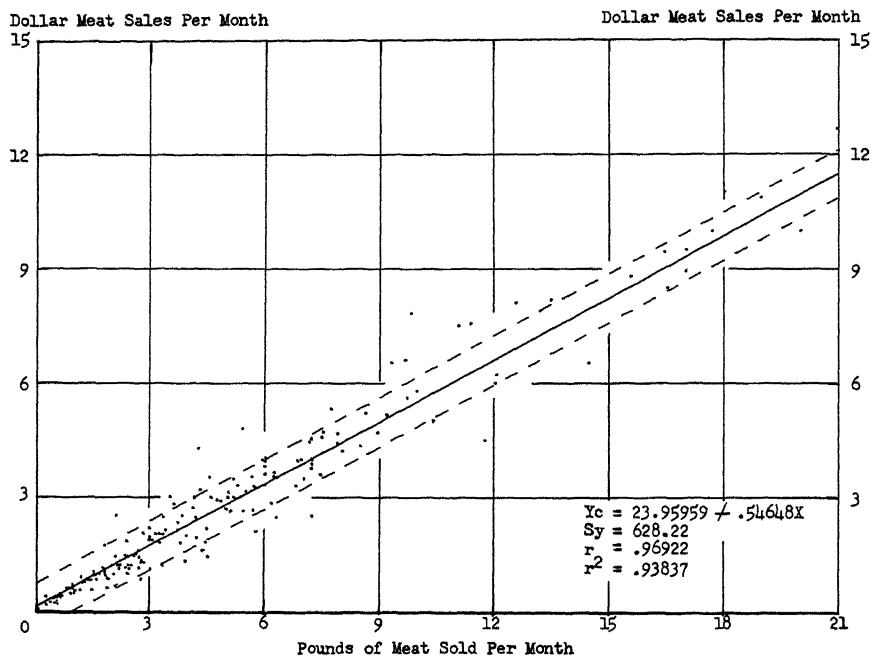


Source: Original Data

APPENDIX

CHART K

Line of Regression Between Value of Meat Sold Per Month and Pounds of Meat Sold Per Month for 198 Ohio Retail Stores 1/
May, 1953
(Figures in Thousands)

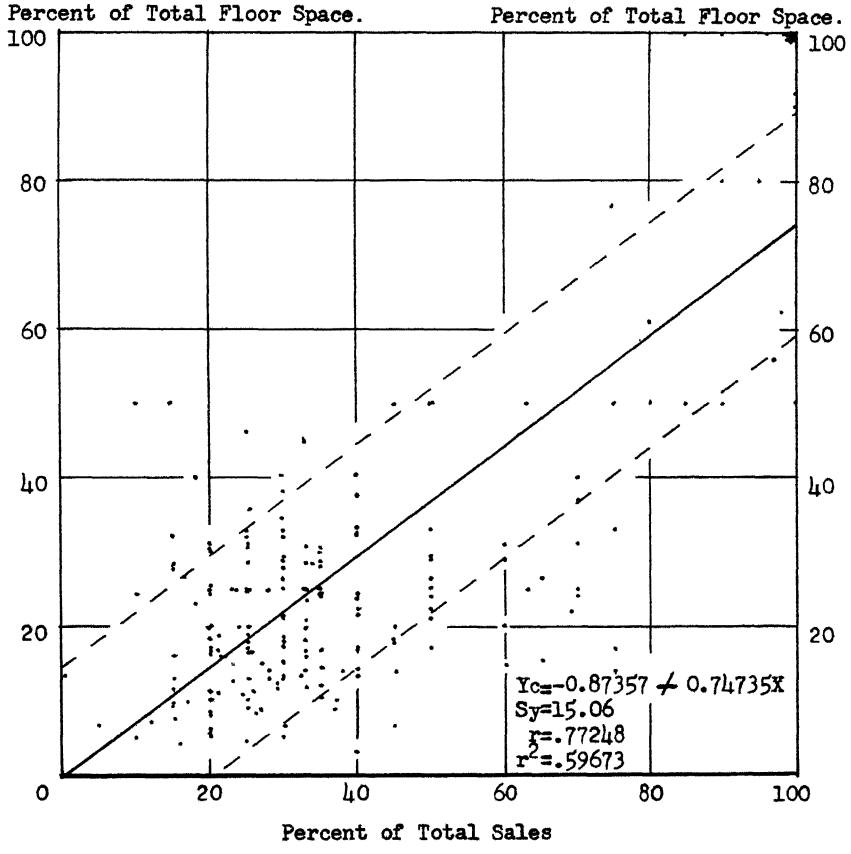


1/ Computation of the line is based on 198 stores with monthly volumes up to 90,360 pounds. For clarity, this chart includes 90.1 percent of these stores.

Source: Original Data

CHART L

Line of Regression Between Percent of Total Store Sales Found in Meat Department and Percent of Total Store Floor Space Taken by Meat Department for 201 Ohio Retail Stores, May, 1953



Source: Original Data

Correlation Analysis between the Wholesale and Retail Prices of Pork, Beef and Lamb

From this study of selected meat cuts an effort was made to obtain information on the relationship that existed, if any, between the wholesale and retail price of meat. A limited amount of statistical analysis by means of simple correlation was performed.

Only two variables are involved in computing simple correlation. One variable is known as the independent variable, and the other, the dependent variable. For this study, the weekly average Chicago wholesale price was the independent variable (x) and the weekly mean retail price was the dependent variable (y).

This measurement describing the relationship between quantities was the coefficient of correlation (represented by the symbol 4). This is a measure of the degree of relationship between two variables irrespective of any terms in which the two variables were originally expressed.

Zero (0) and unity (1) are the limits to the value of (r). If the value for r is 0, there is no relationship between the two variables. In other words, the two variables fluctuate in absolute independence. Where r is near unity or 1, a high degree of relationship is present between the two variables. The greater the value of r the greater is the relationship between the two variables. For this study, r was considered as significant when its value was 0.5 or above.

It is possible to have a negative correlation between two variables--the slope of the line is downward. This occurs when one variable acts in reverse to the other variable.

The coefficient of correlation when squared is known as the coefficient of determination (r^2), which measures the variance in the dependent variable that is explained by the independent variable. It may also be thought of as the percent of factors found present in both variables.

The coefficient of correlation was obtained directly from the ungrouped data by the following formula:

$$r = \frac{N\Sigma XY-(\Sigma X)(\Sigma Y)}{\sqrt{[N\Sigma X^2-(\Sigma X)^2][N\Sigma Y^2-(\Sigma Y)^2]}}$$

The coefficient of determination was calculated by squaring the resultant coefficent of correlation.

The relationship between the two variables involved were determined under two (2) conditions for each category. One condition consisted of correlating for the year 1955, the relationship between the two variables using the same week as the base. The other condition was to lag the retail price one week. For instance, the average wholesale price for the week of January 7, 1955, was compared with the weekly mean retail price for the week of January 14, 1955, etc.

In addition to the computation of r and r^2, a line of regression was computed by the means of the estimating equation, the formula for which is $Yc=\underline{a}\pm\underline{bx}$. The purpose of this line is to estimate the positions of each dependent variable observation on the basis of known values of the independent variable. Whether or not this line is in the proper position, that is, the position that will allow correct estimates of the value of the dependent variable is determined by calculation by the Method of Least Squares.

To determine the dependability of Yc, the measurement of the standard error of estimates was also computed. Since the line (Yc) is a line of estimates and is calculated by means of an estimating equation, it is not to be expected that all the actual (Ya) positions should fall on the line. It is desirable to determine what proportion of the prices might fall within an arbitrary range of error. Such a range of error is represented by the symbol Sy and is determined by the following equation:

$$Sy = \sqrt{\frac{\Sigma Y^2 - a(\Sigma Y) - b(\Sigma XY)}{N}}$$

This formula results in a value of Sy which may be interpreted as a general measure of variation of the actual Y values (Ya) from the computed values, or line of estimation (Yc). Numerically speaking, it is an estimate of the range above and below the line of estimation within which 68.27 percent of the items may be expected to fall (in other words, plus or minus one standard error).